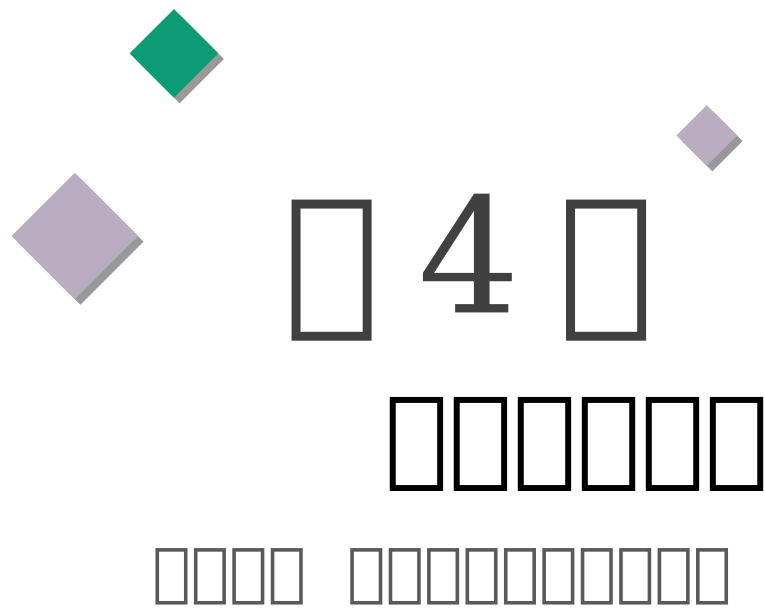
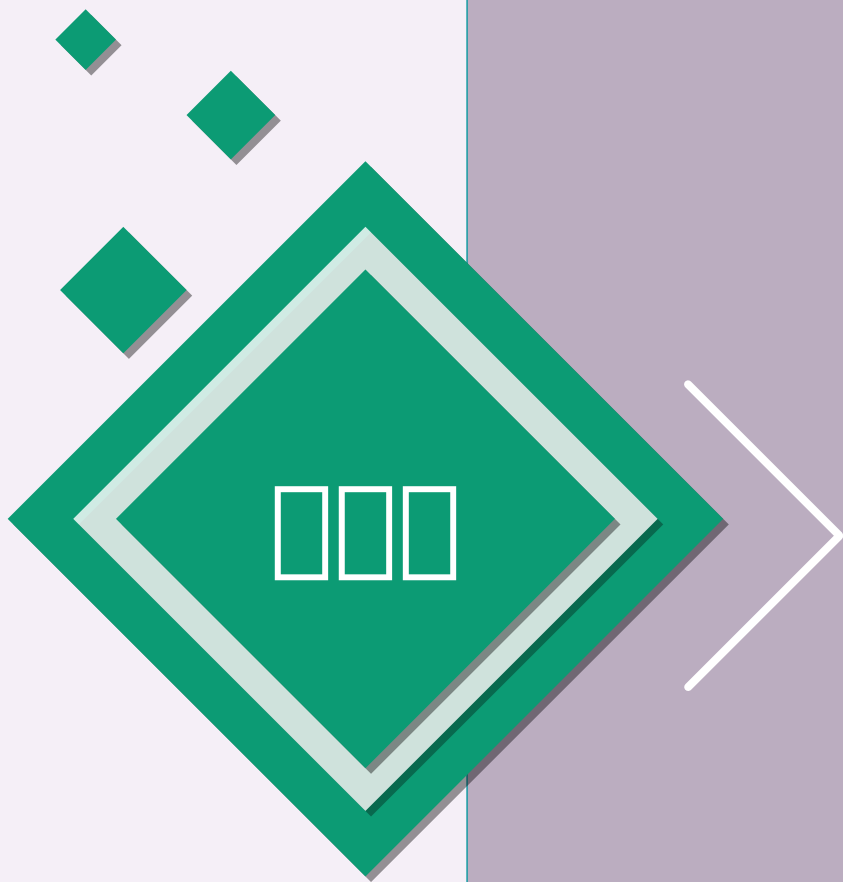
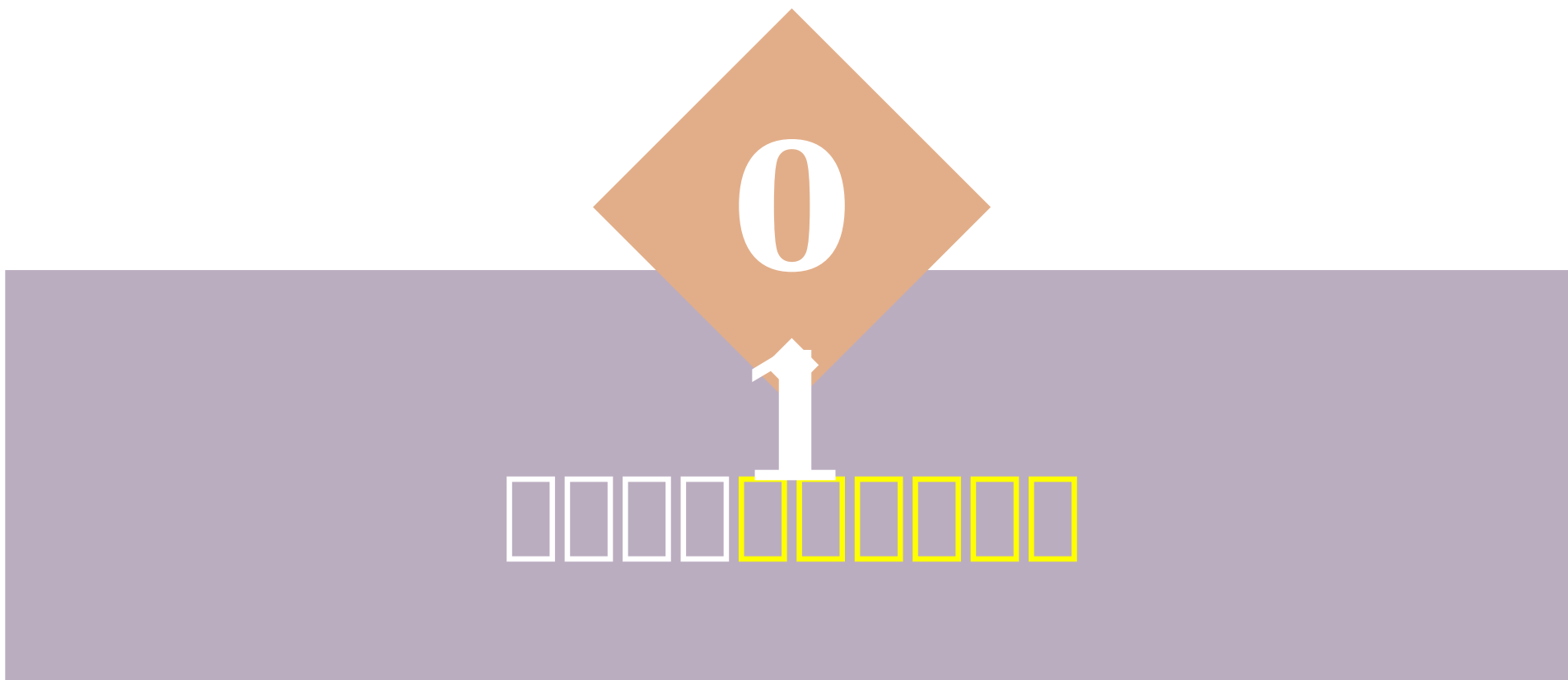
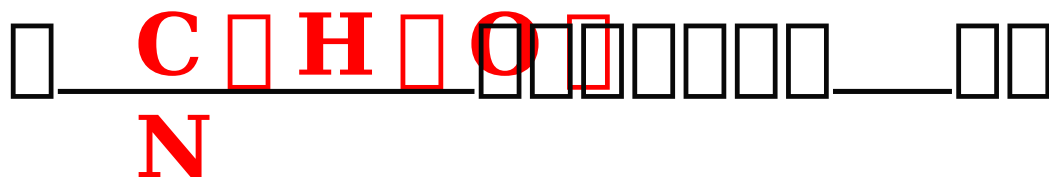




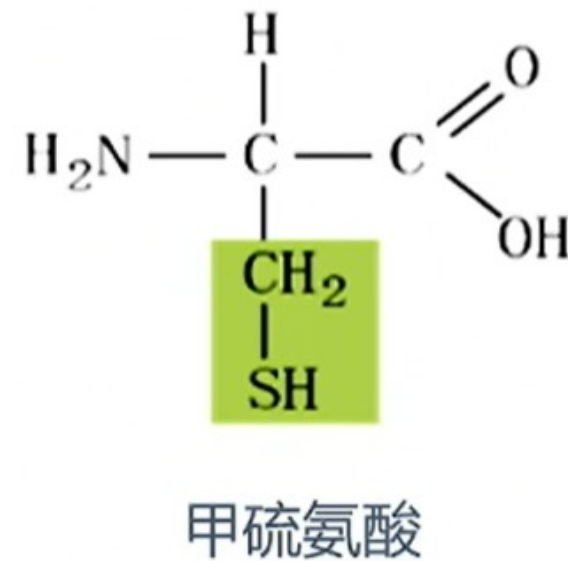
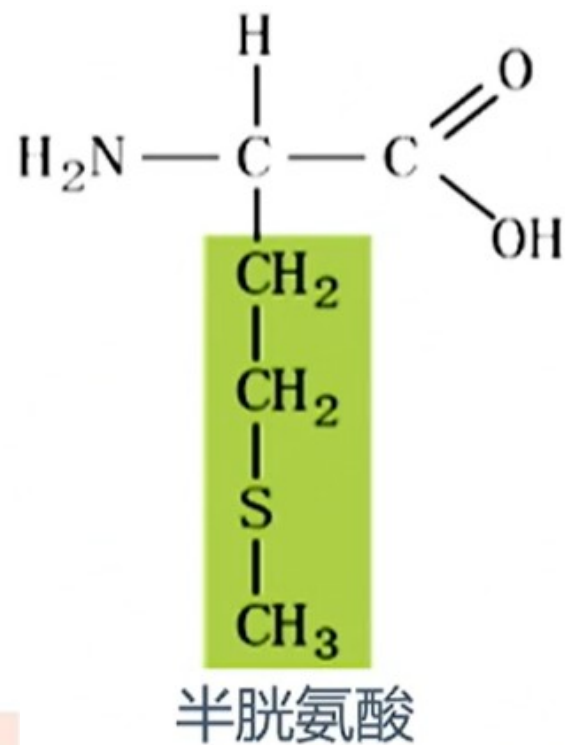
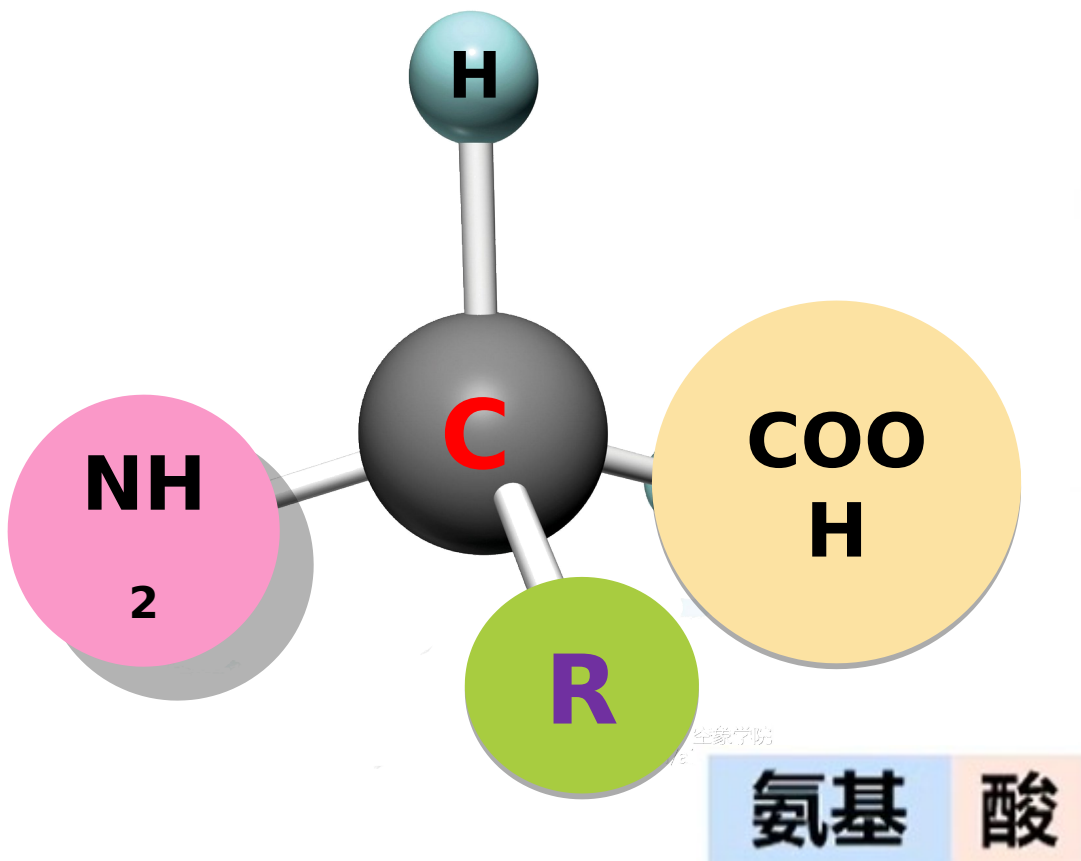


100 — 90 — 80

1. □□□□



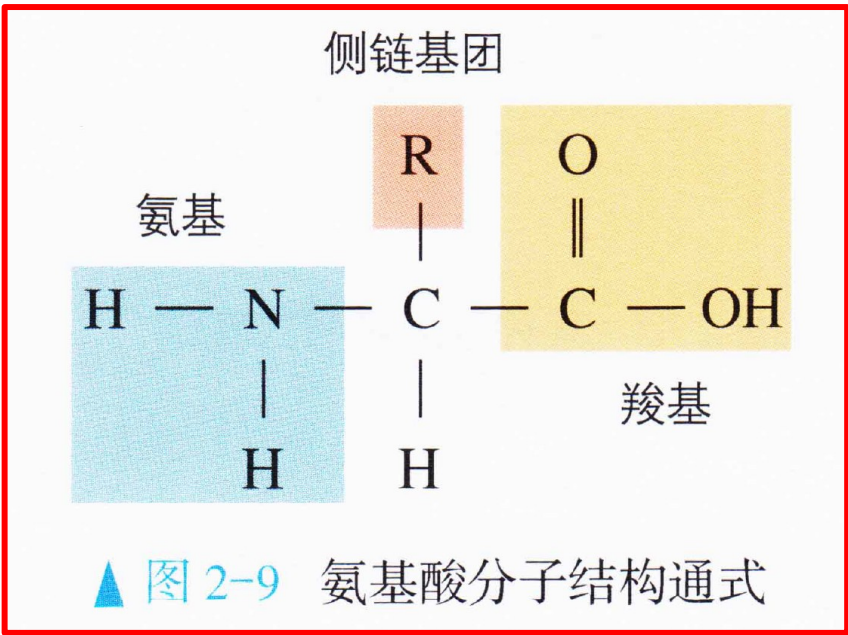
S



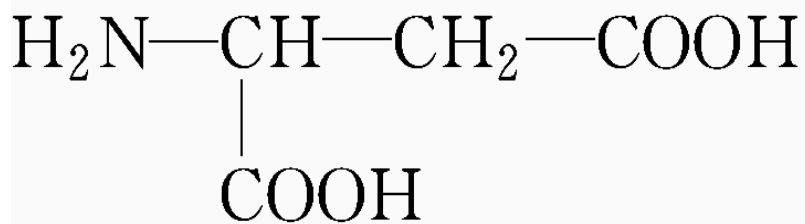
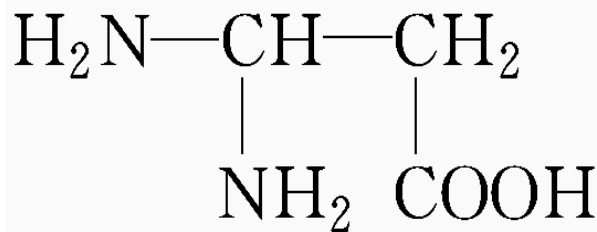
A horizontal number line with a green wavy border. It is marked with numbers from 0 to 100 in increments of 10. A red arrow points from the number 10 to the number 30.

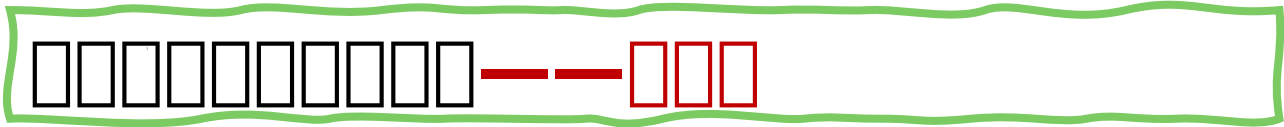
2. □□

2. 5. 5. 5. 5.



S



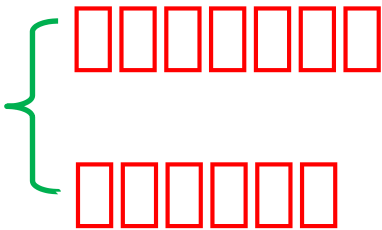


3. □□ □□□□□□□□ R □□□

□□□□

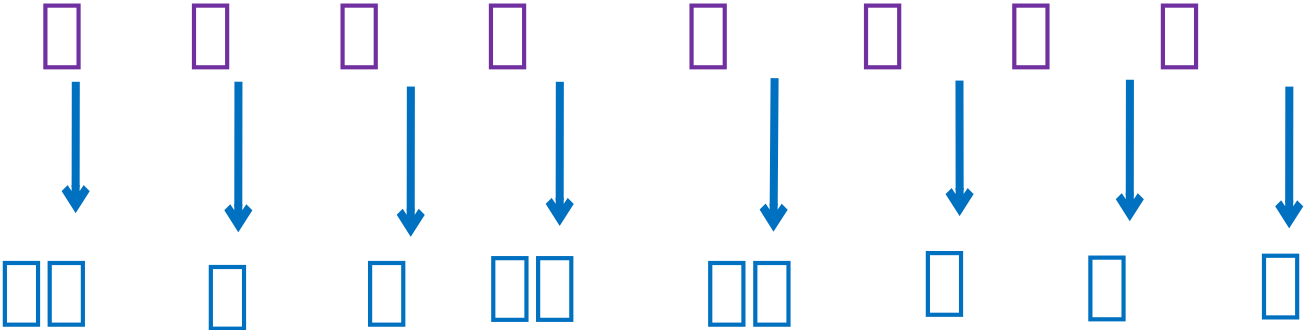
□□□□

21 □□□□



□□□□□□□□□□□□□□ 13 □

□□ □□□□□□□□□□□□□□ 8 □

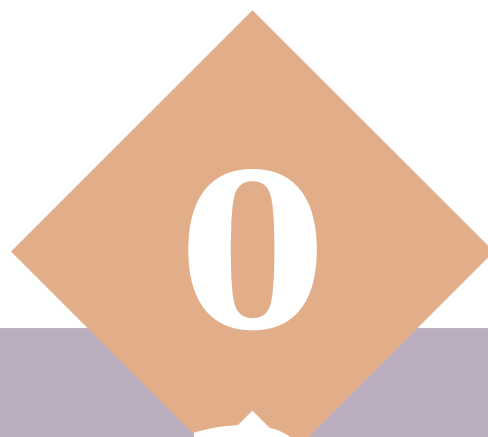




- ① 12 red boxes (3 purple boxes) 1 red box
- ② 12 black boxes → 5 red boxes
- ③ 3 black boxes → 2 black boxes (5 black boxes)
- ④ 8 black boxes → 5 red boxes
- ⑤ 3 black boxes → 3 black boxes → 15 red boxes
- ⑥ 3 black boxes → 4 black boxes (IAA)

①  → 

②  tRNA → 

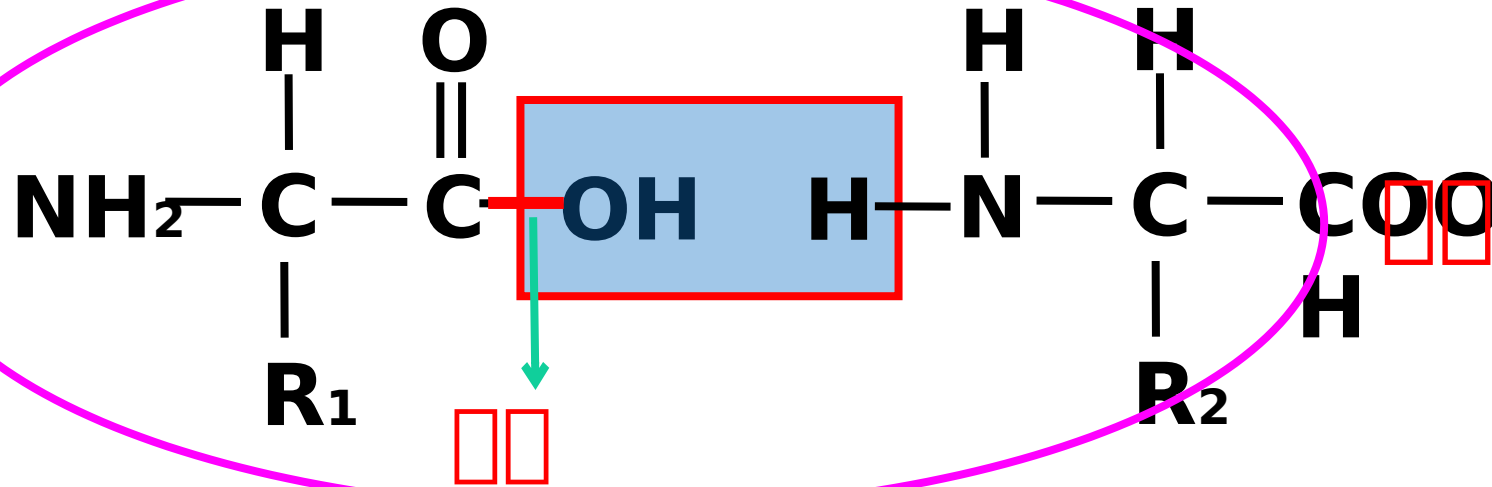


2



□□□□□□□□□□□□

1.氨基酸的 □□□□ : □□□ □□□



1.氨基酸的 :



解读

H₂O中原子的来源

H:来自R₁所在氨基酸的 和

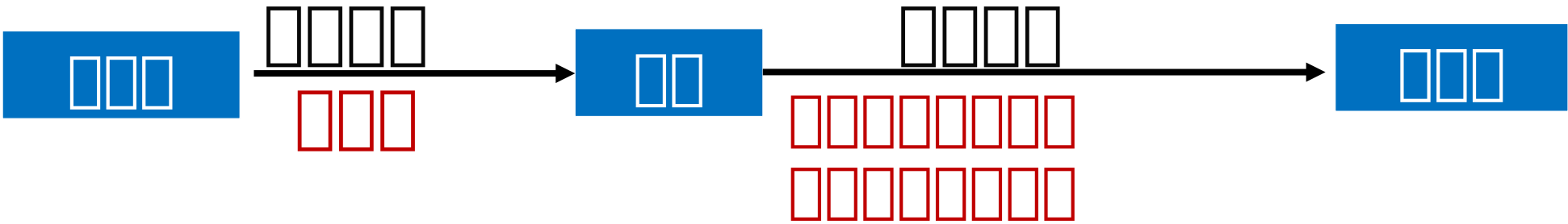
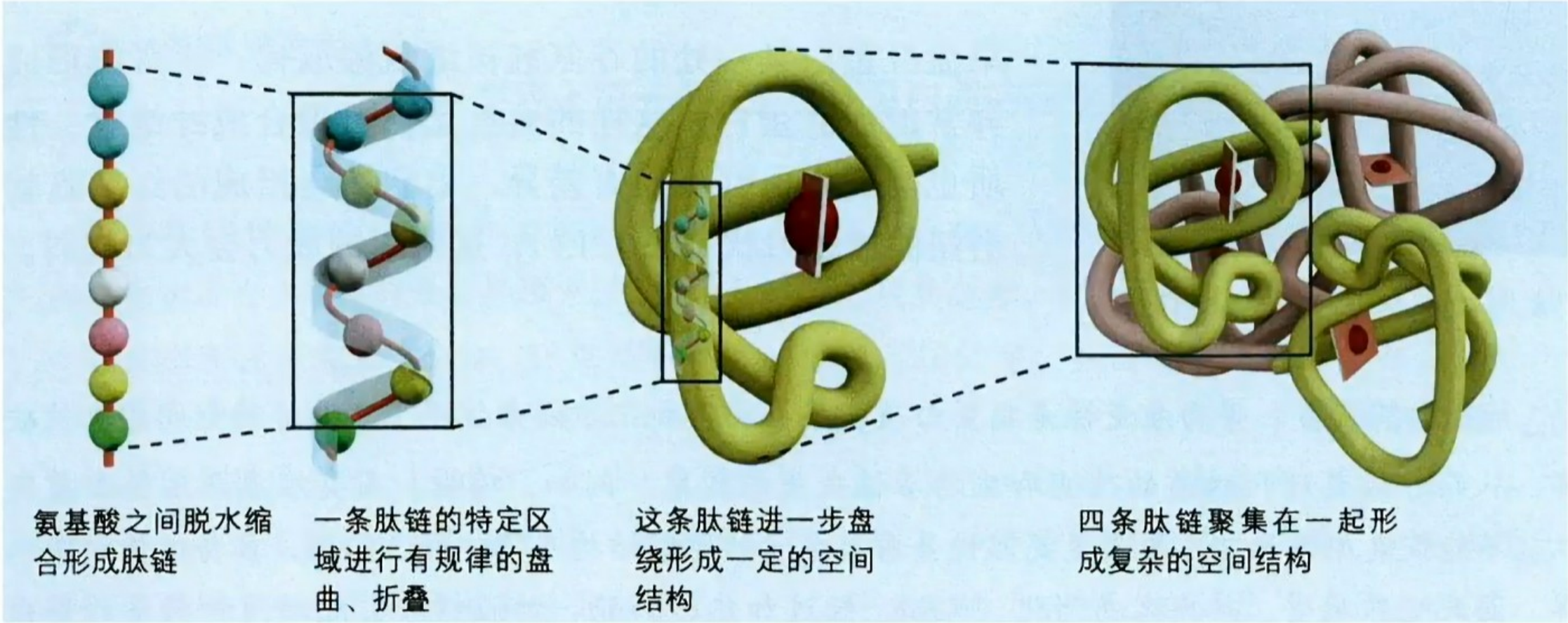
R₂所在氨基酸的

O:来自R₁所在氨基酸的

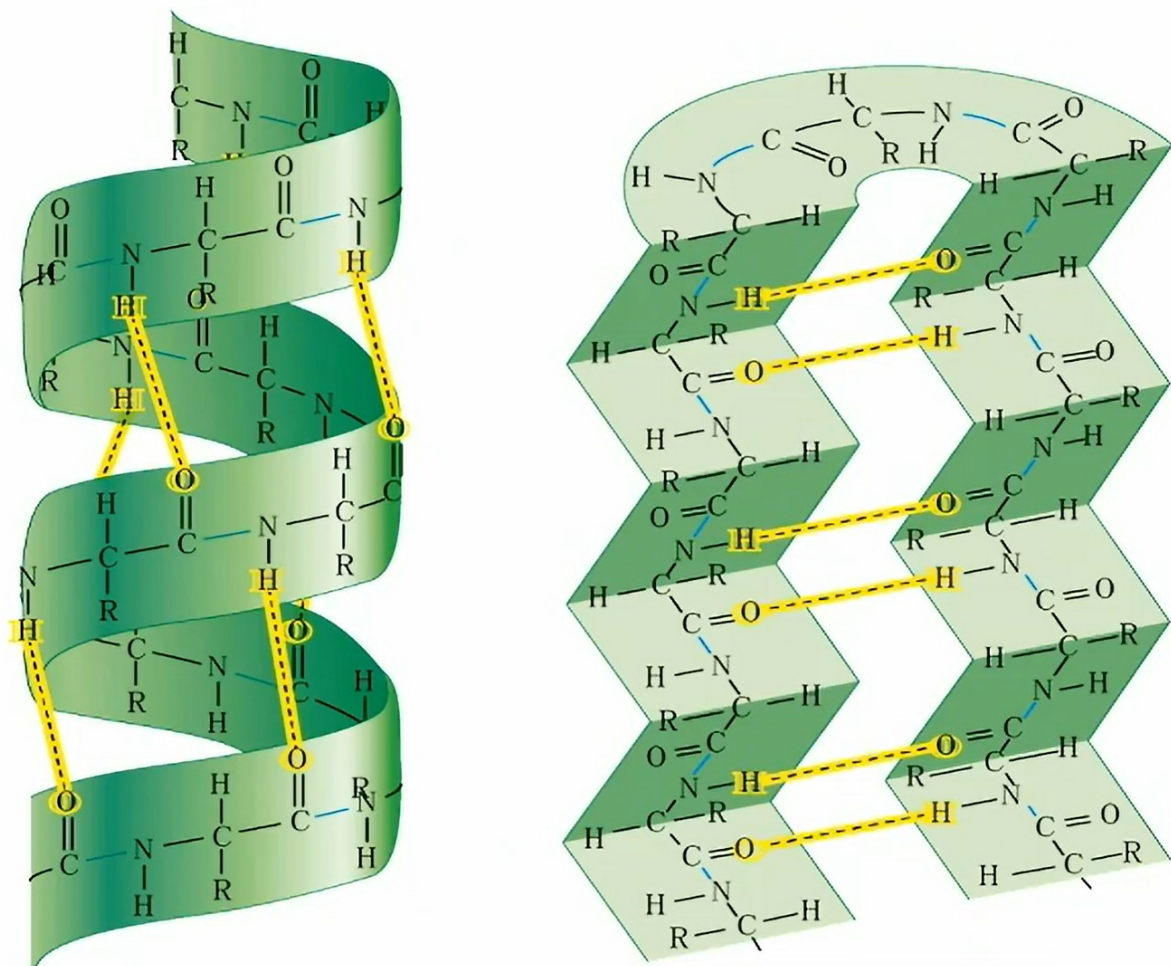
二肽中氨基或羧基的含量 至少各 1 个

激活 Windows
转到“设置”以激活 Windows

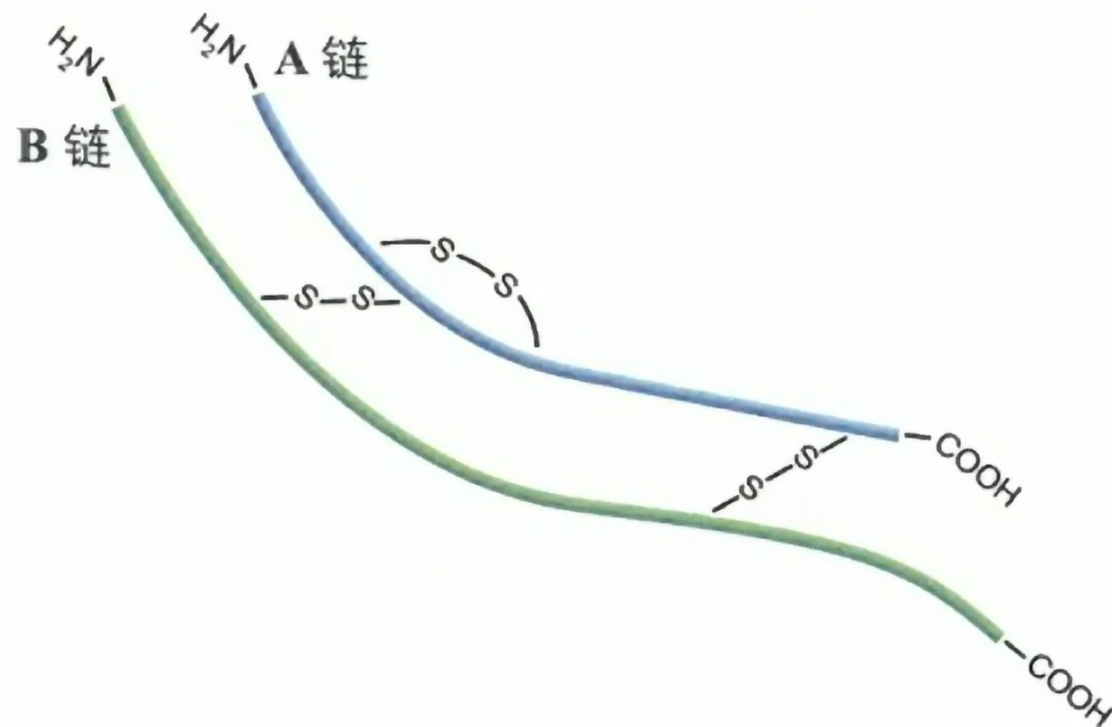
2.蛋白质的结构层次



2.蛋白质的结构层次 P30

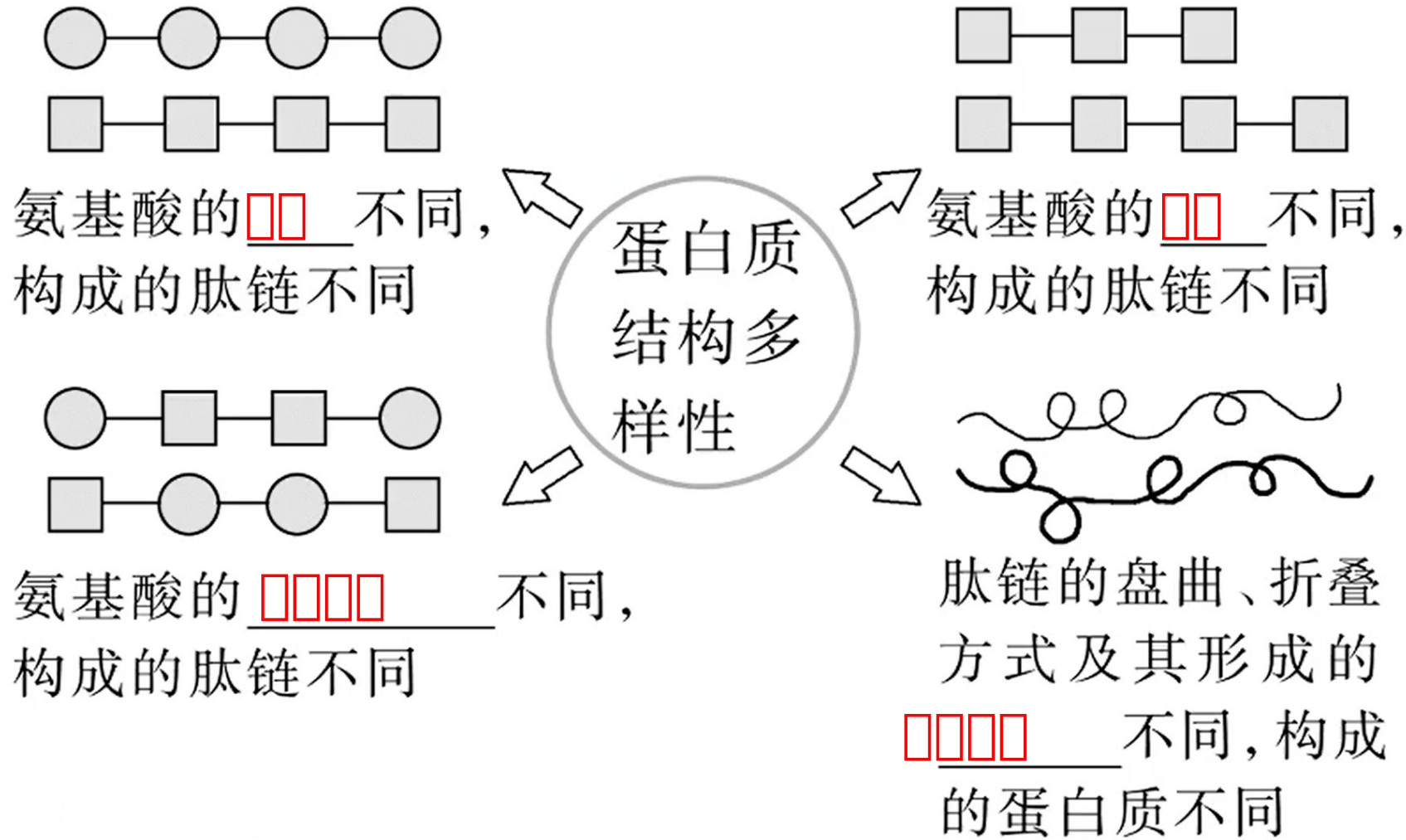


氢键：使多肽能够盘曲、折叠



二硫键：使数条多肽结合在一起

3.蛋白质的多样性



1

1

2

DNA

1

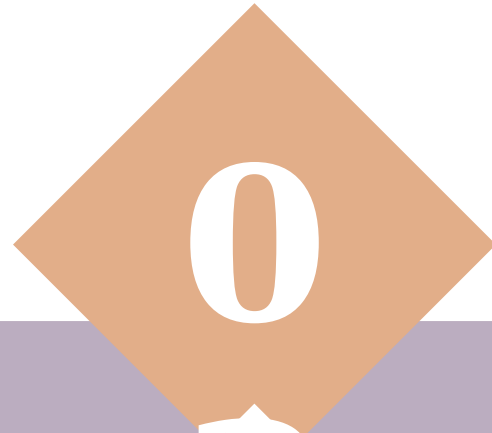
Diagram illustrating the structure of a polypeptide chain, showing the repeating units (amino acids) and the peptide bonds (CO-NH) connecting them. The structure is highlighted with red circles around the peptide bonds and blue boxes around the side chains.

The polypeptide chain is shown as a sequence of amino acids: $\text{NH}_2-\text{CH}(\text{H})-\text{CO}-\text{NH}-\text{CH}(\text{H})-\text{CO}-\text{NH}-\text{CH}(\text{H})-\text{CO}-\text{NH}-\text{CH}(\text{H})-\text{CO}-\text{NH}-\text{CH}(\text{H})-\text{COOH}$.

The side chains (R groups) are highlighted in blue boxes:

- Top left: $\text{CH}_2-\text{C}_6\text{H}_4-\text{OH}$ (p-Hydroxybenzyl group)
- Bottom left: H (Hydrogen)
- Bottom middle: H (Hydrogen)
- Bottom right: $\text{CH}_2-\text{C}_6\text{H}_5$ (Benzyl group)
- Top right: $\text{CH}_3-\text{CH}(\text{CH}_3)-\text{CH}_2-$ (Isobutyl group)

- A. □□□□□ 3 □□□□□□□□□□□□□□□□ 4 □□□
- B. □□□□□□□ 1 □□□□□□□□□ 2 □□□□□□□
- C. □□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□□



3



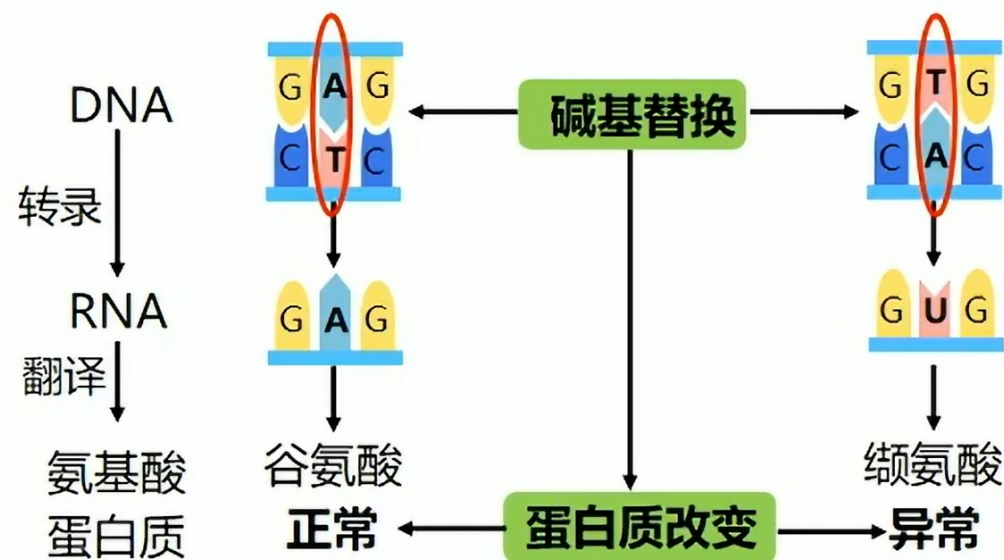
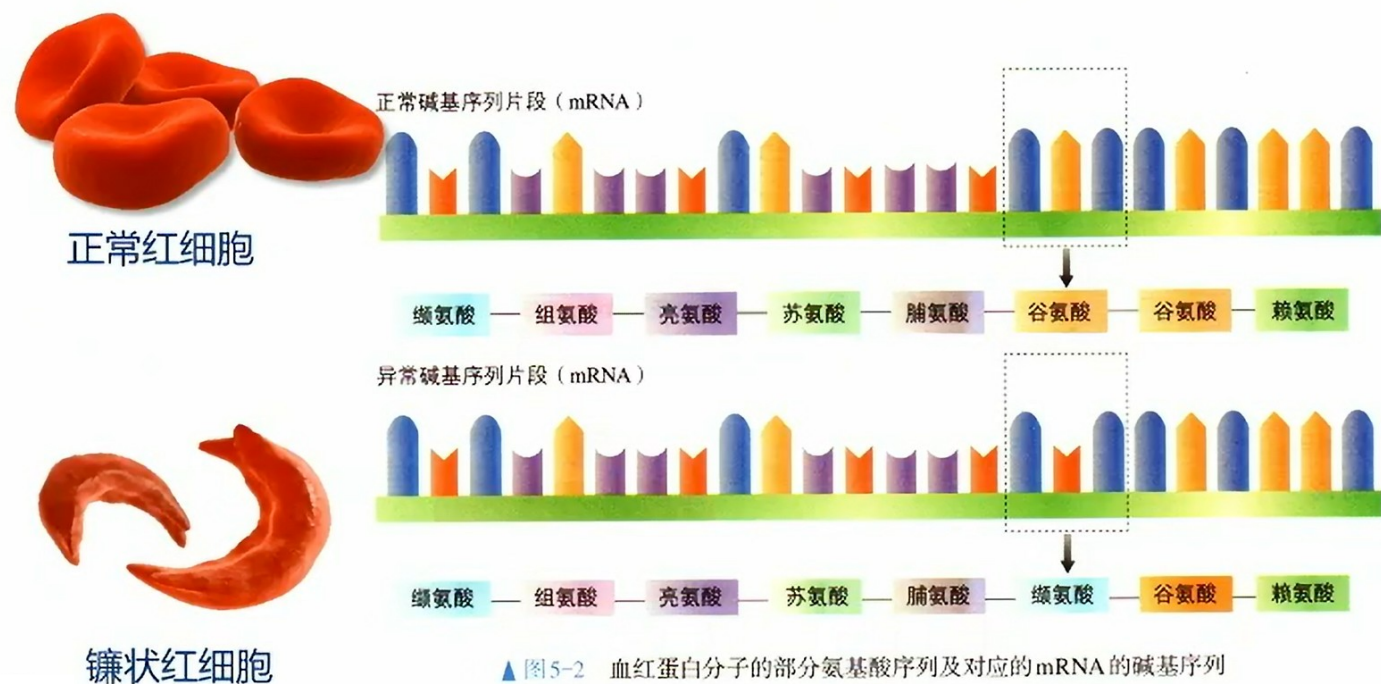
□ □ □ □ □ □ □ □ □ □ □ □ □ □



2.蛋白质功能异常

□□□□ → □□□□

📄 血红蛋白 β 链第6位谷氨酸被替换成了缬氨酸，可引起镰刀型细胞 □□□





□□□□□□□□□□□□□□□□

水解

□□□□□□□□□□

□□□□□□□□

□□□□□

□□□

氧化分解

□□ CO₂ □ H₂O □□□



拿捏了

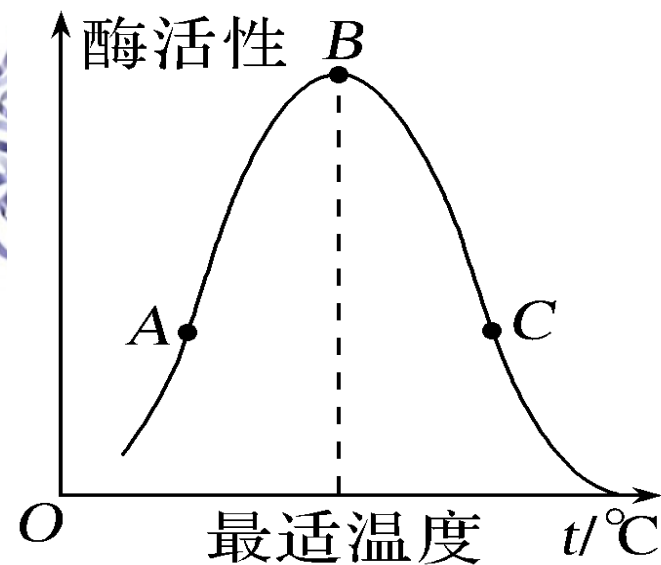


盐析

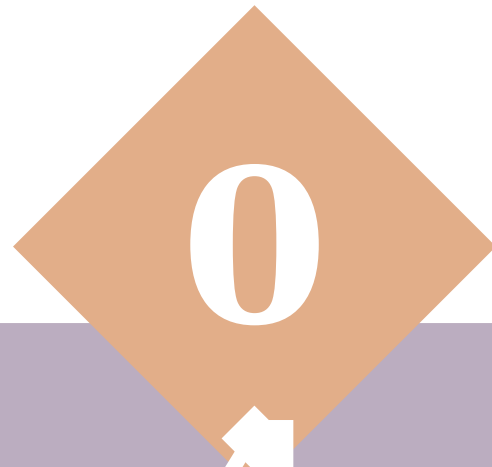
蛋白质在盐溶液中溶解度降低析出，其空间结构未变，仍有活性。可逆

变性

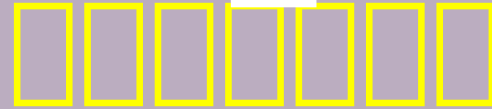
氨基酸顺序 ， 肽键 ，
空间结构 ， 功能 。



低温不会破坏蛋白质的空间结构，只是抑制其功能

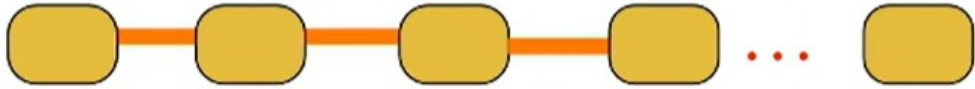


4

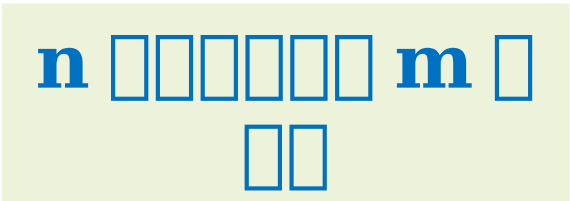




⋮



氨基酸数	肽键数	脱去水分子数
2	1	1
3	2	2
4	3	3
⋮	⋮	⋮
n	<u>$n-1$</u>	<u>$n-1$</u>

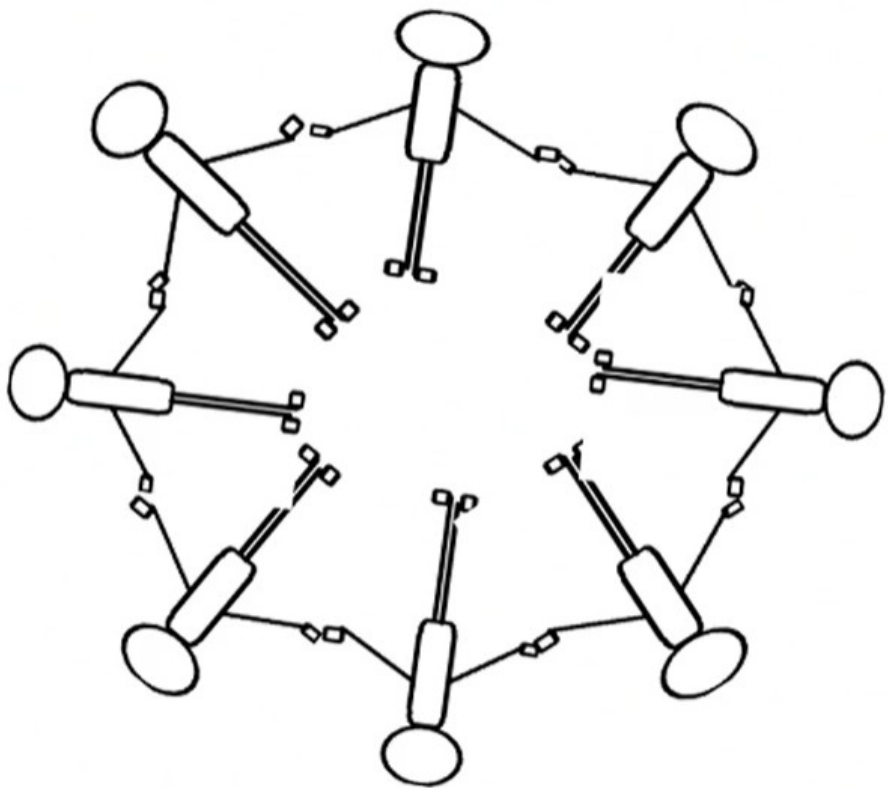


$n - m$

$n - m$



□□□□□□□□



□□ 1



□□□□□□ = □□□□□□ = □□□□□□□□□□
□□□□ □□□ = □□□□□□ = □□□□

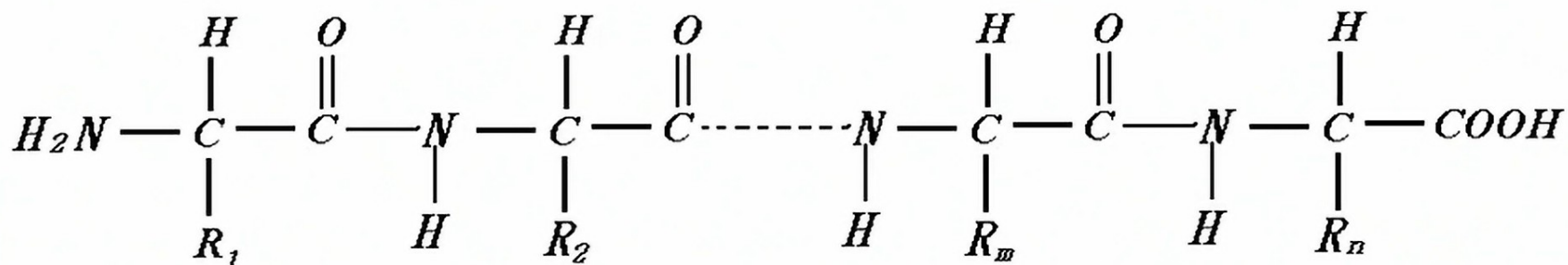
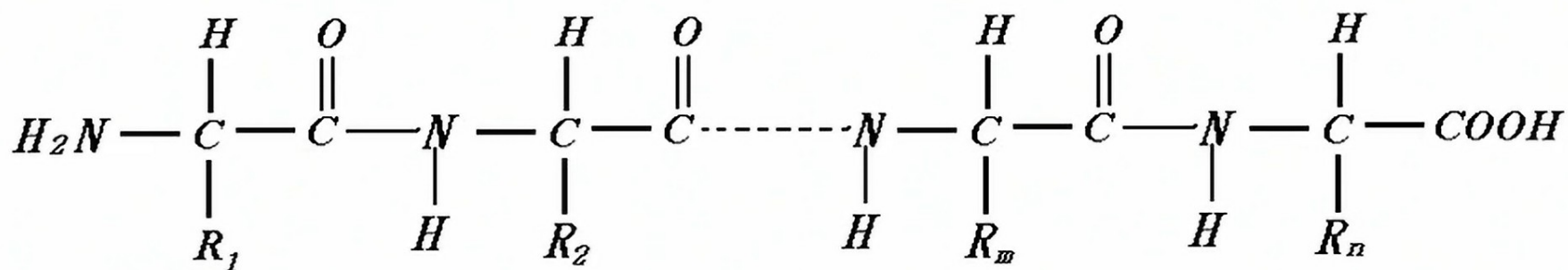


□□□□□□□

□□ **3** □□□□□□□□

①至少→肽链数

②游离总数=肽链数+R基中含有的氨基或羧基数





4

--	--	--	--	--	--	--

m ☐ ☐ ☐ ☐

n

[illegible]

7

C

B.n-2m

C.n+m

D.n+2m

□□ 5 □□□□□□□□□□□□□□

DNA(□□) $\xrightarrow{\text{□□}}$ mRNA $\xrightarrow{\text{□□}}$ □□□

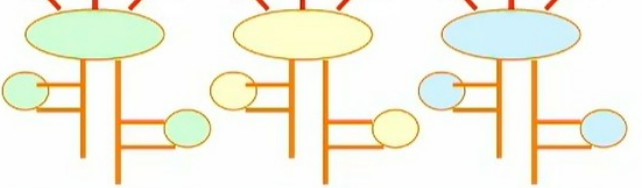
□□□□□□ : mRNA □□□□ : □□□□ =

6 : 3 :

DNA {
C G T G A C C A T
G C A C T G G T A

mRNA
C G U G A G C A U
G C A C U G G U A

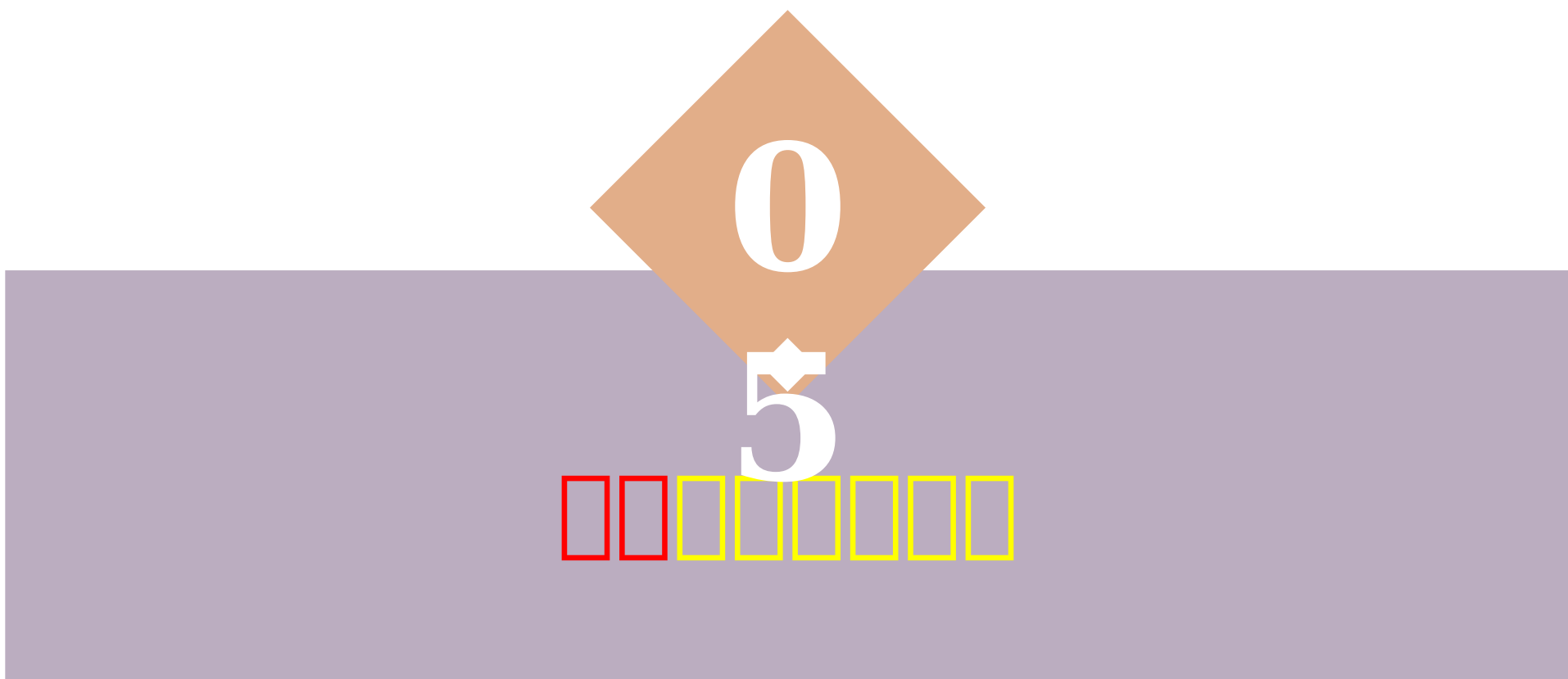
UAG □□□□□

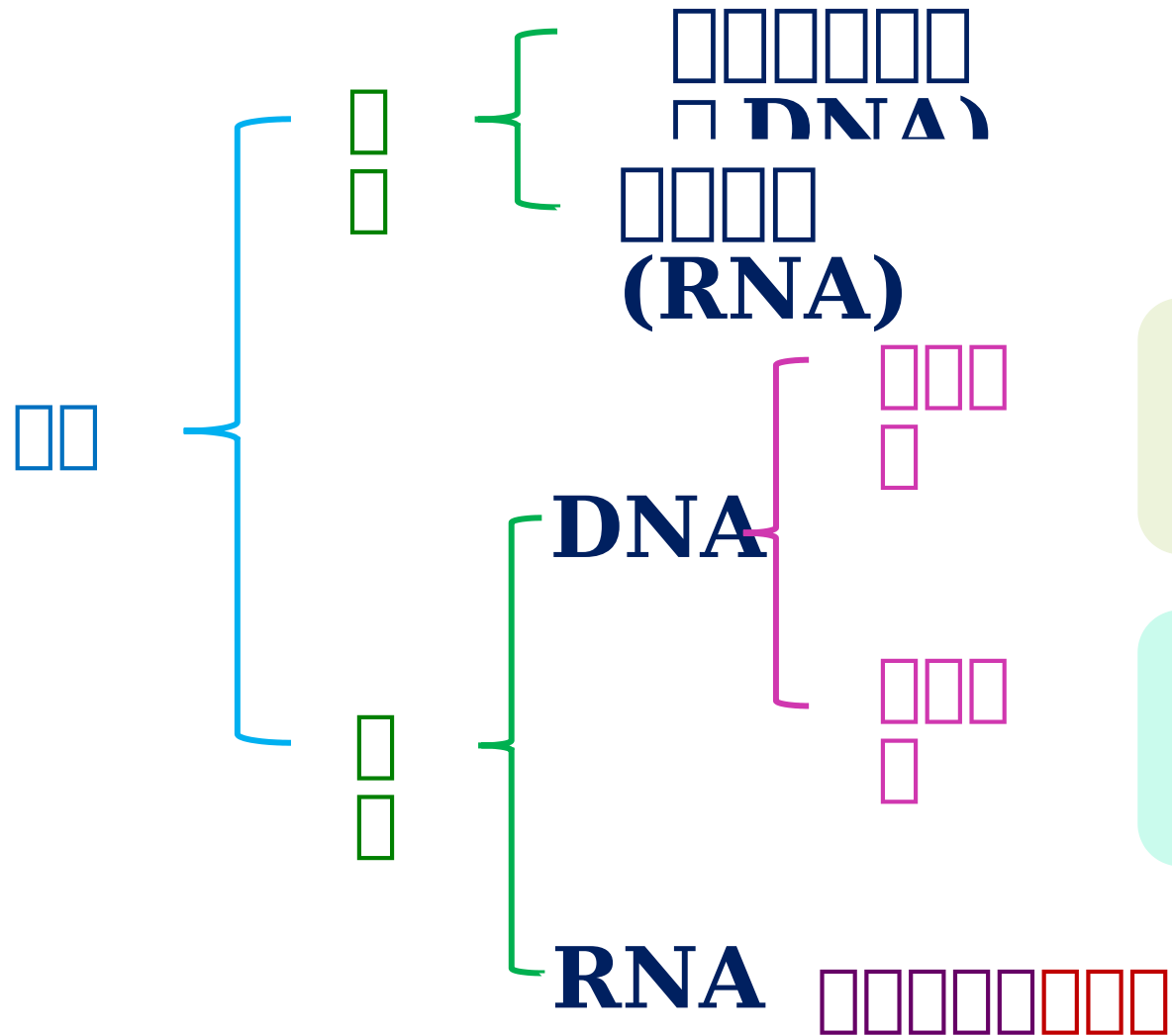
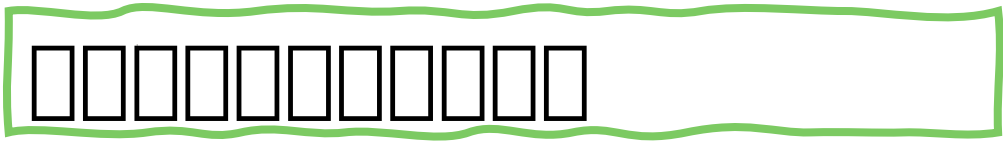
tRNA


氨基酸
精氨酸 谷氨酸 组氨酸

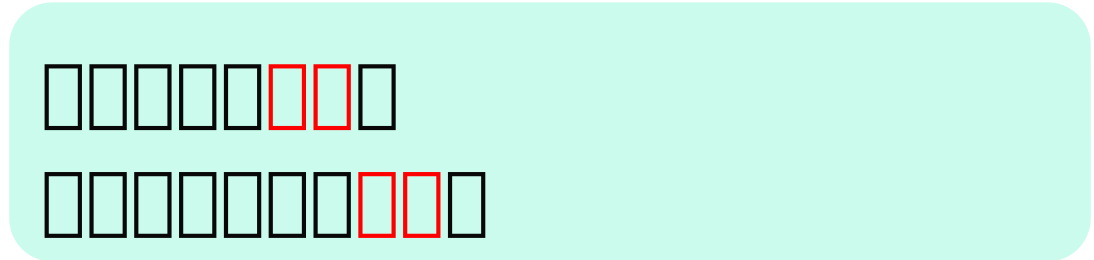
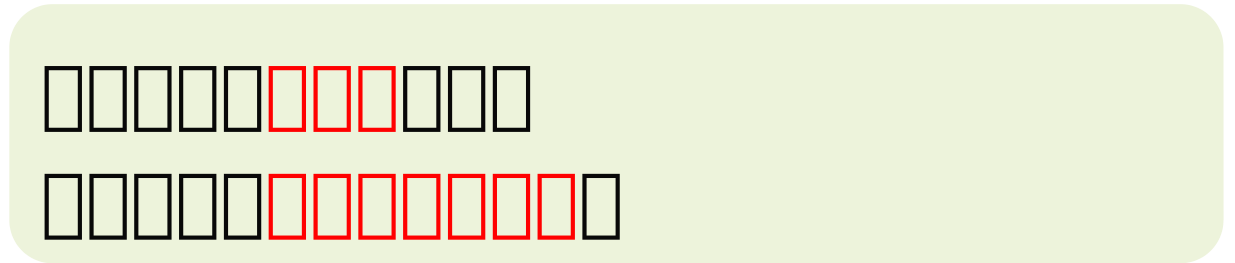


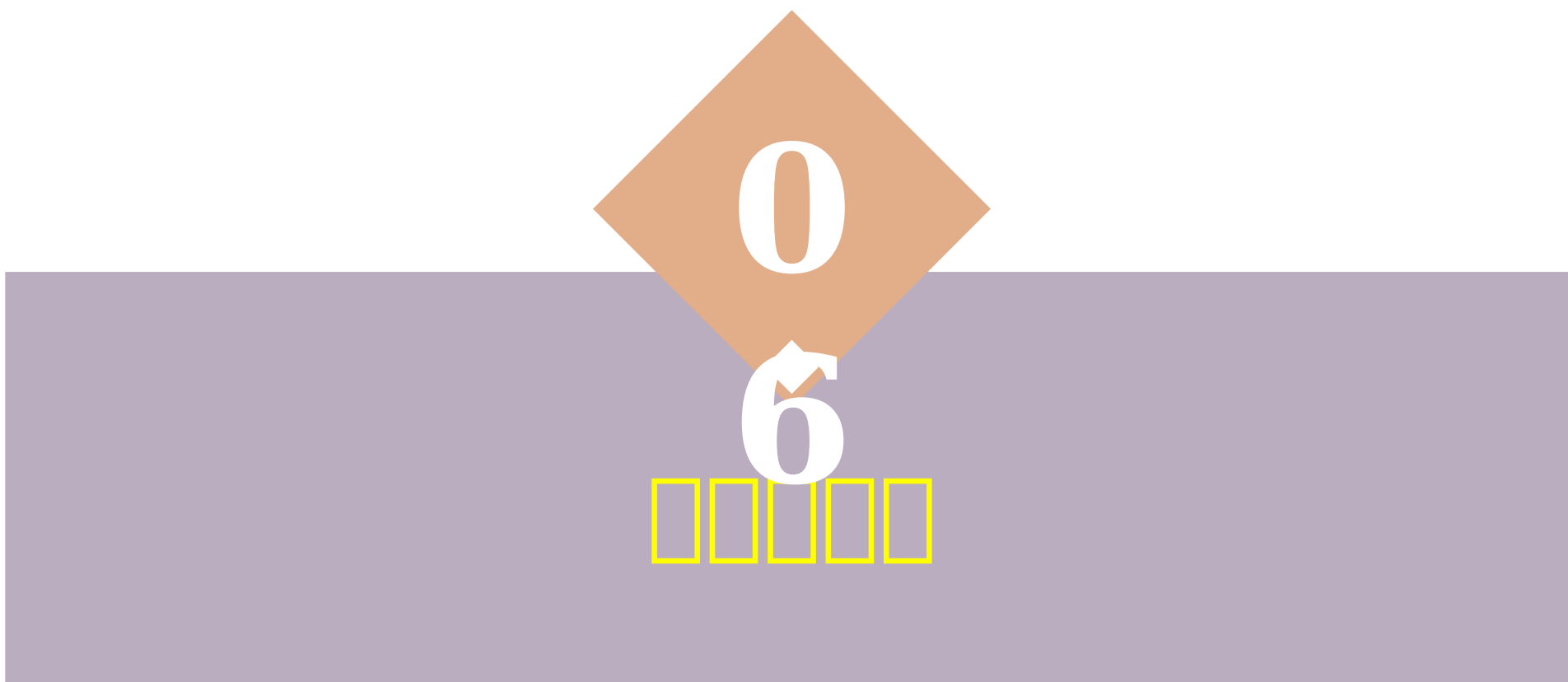
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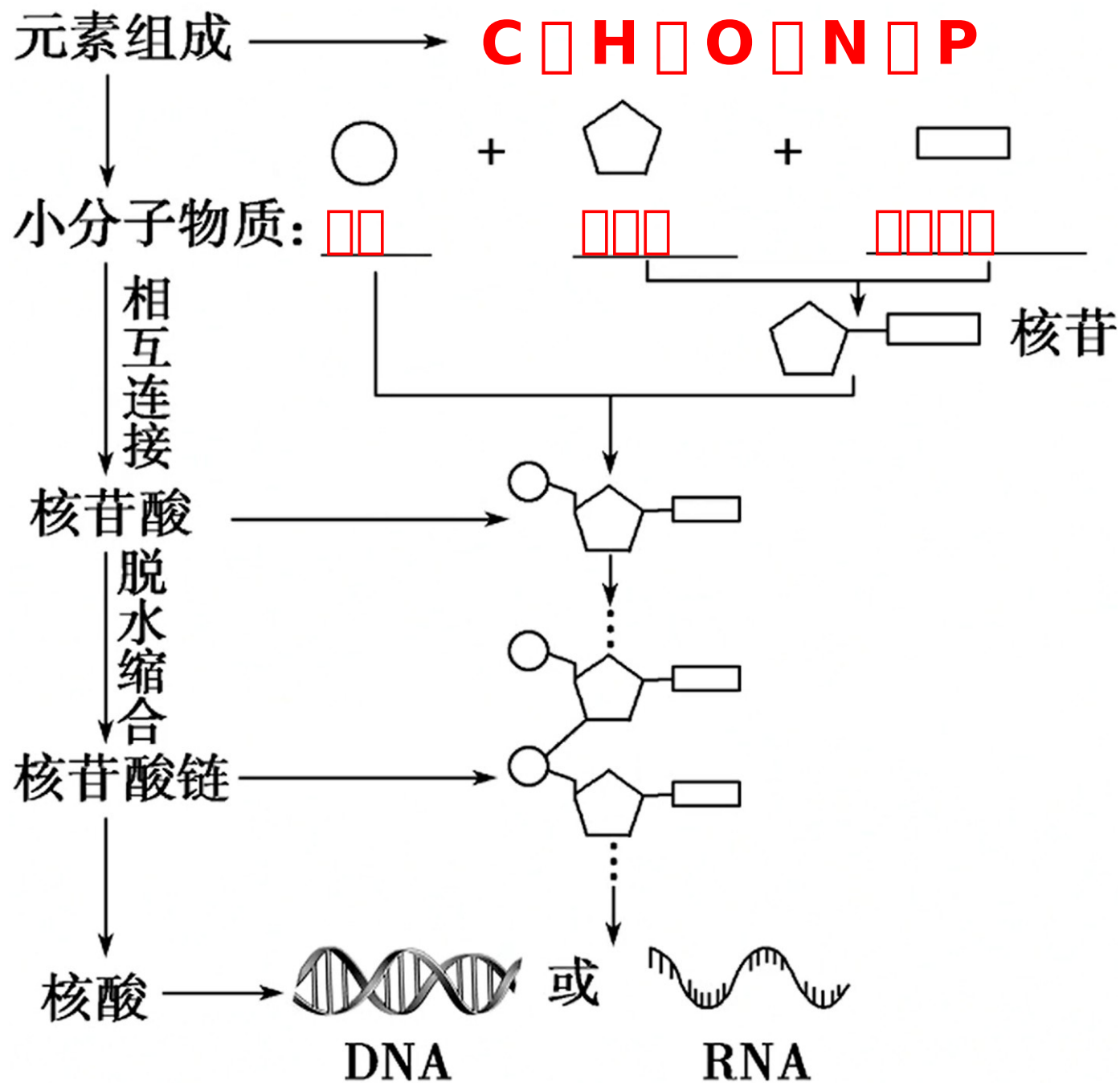




➤ **DNA** **RNA**



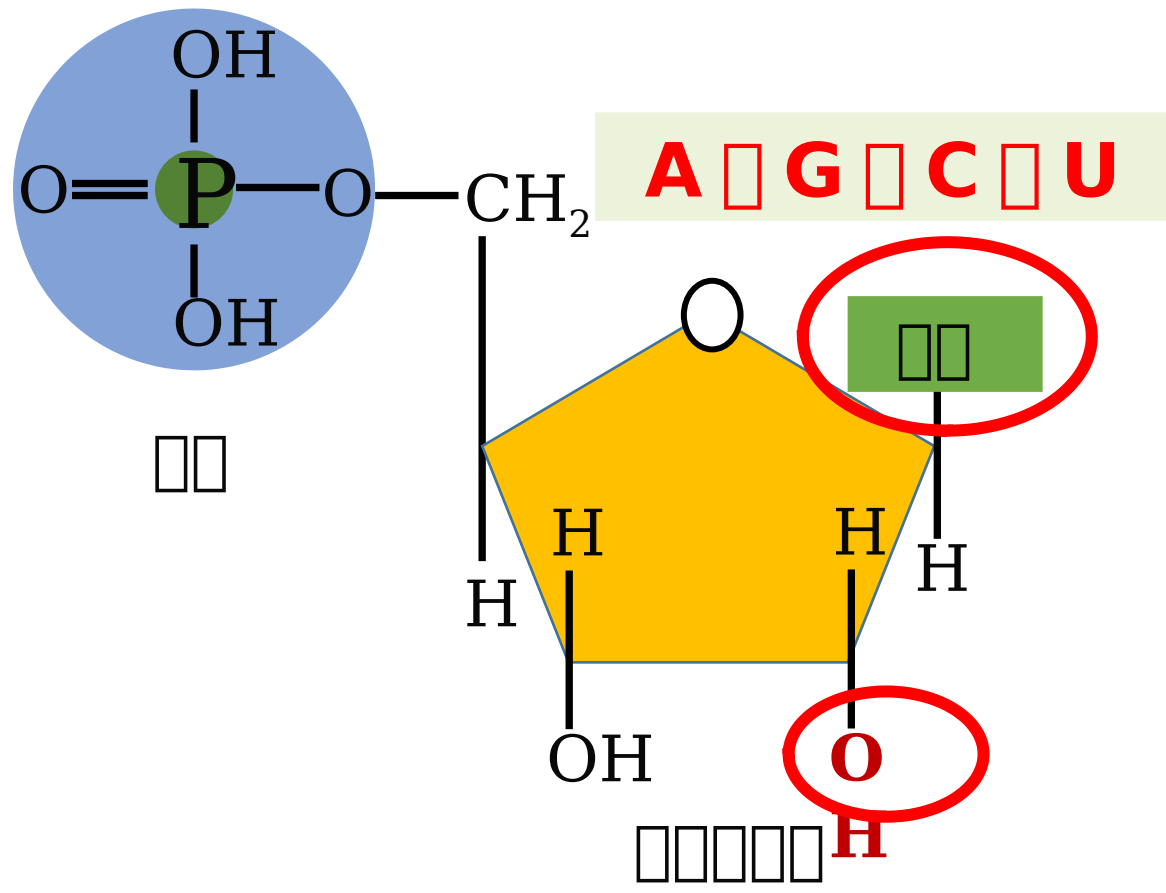
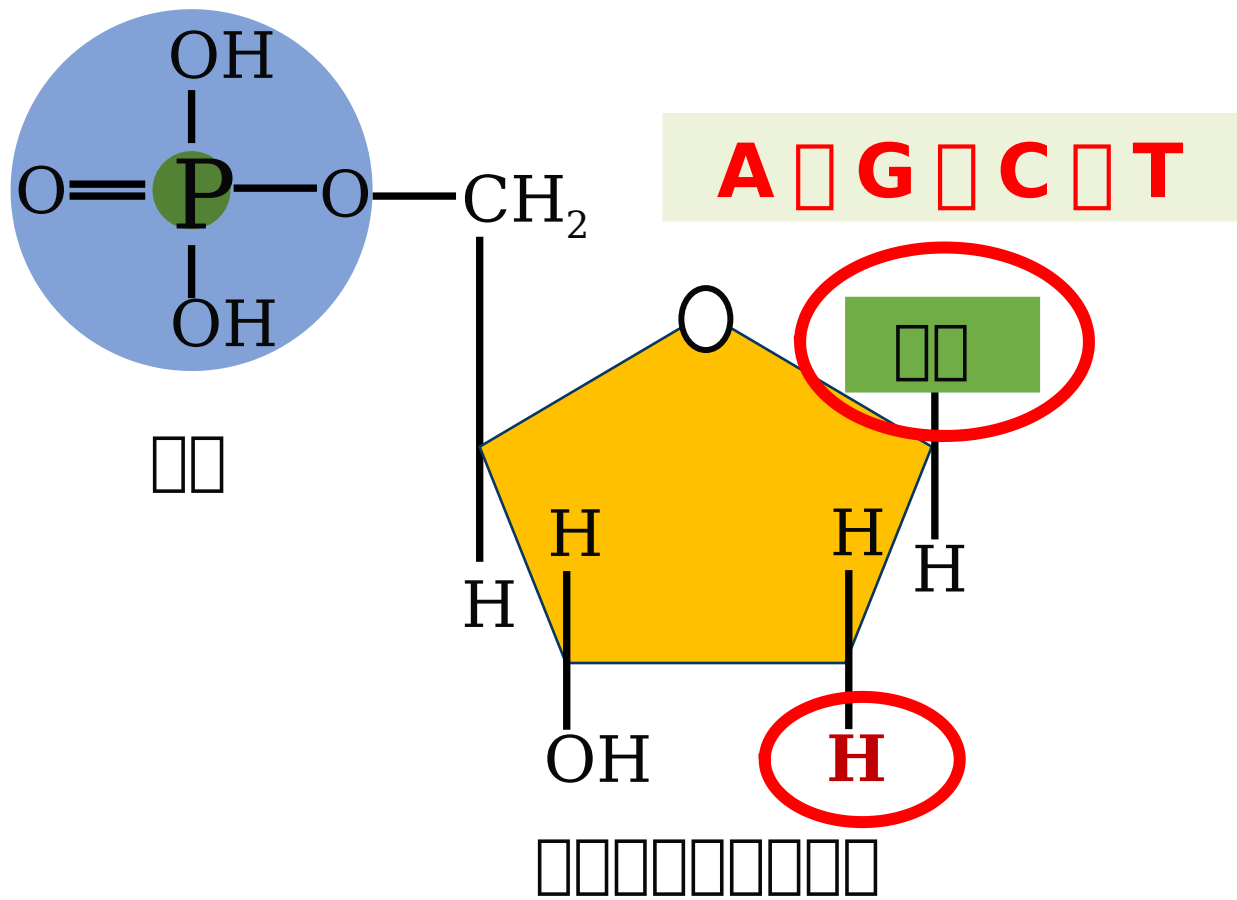
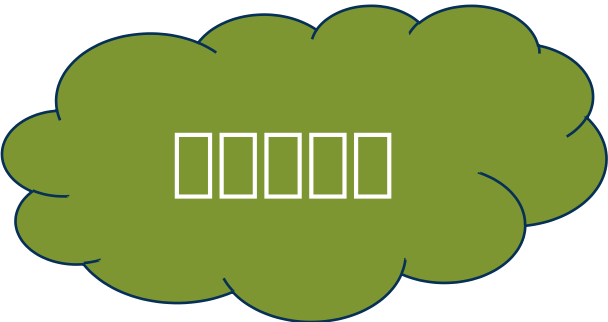




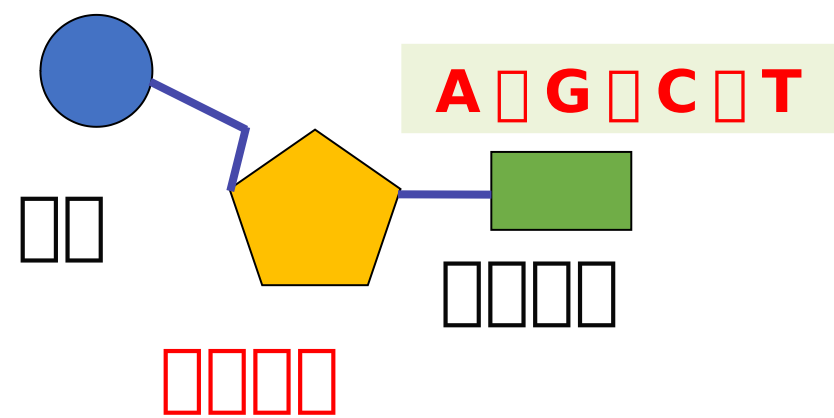
□□ DNA □ RNA □□□□□□

1.DNA □□□□□□ □□□□□□□□□□ □

2.RNA □□□□□□ □□□□□ □



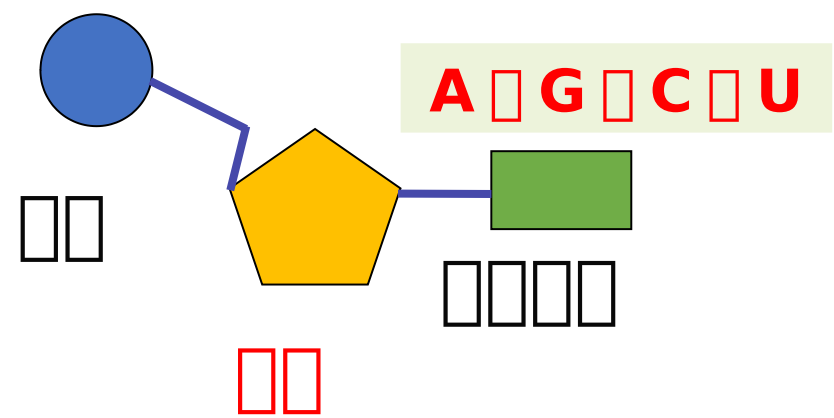
□□ **DNA** □ **RNA** □□□□□□□



□□□□□

□ 4 □□

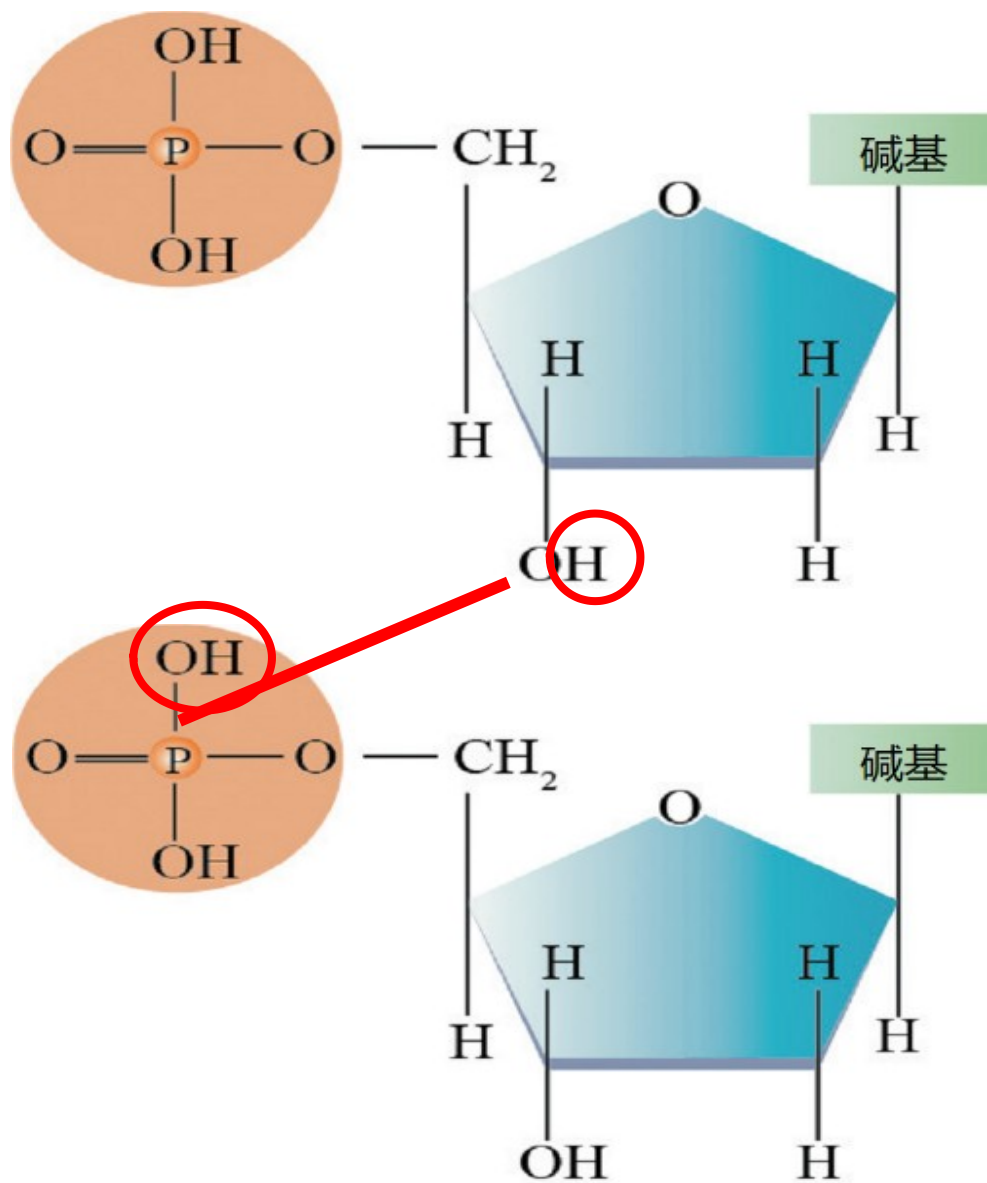
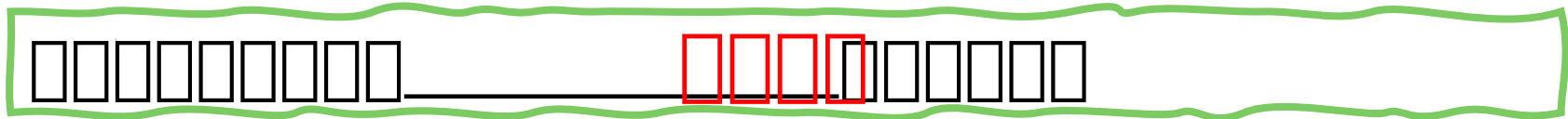
- (A)
- (G)
- (C)
- (T)



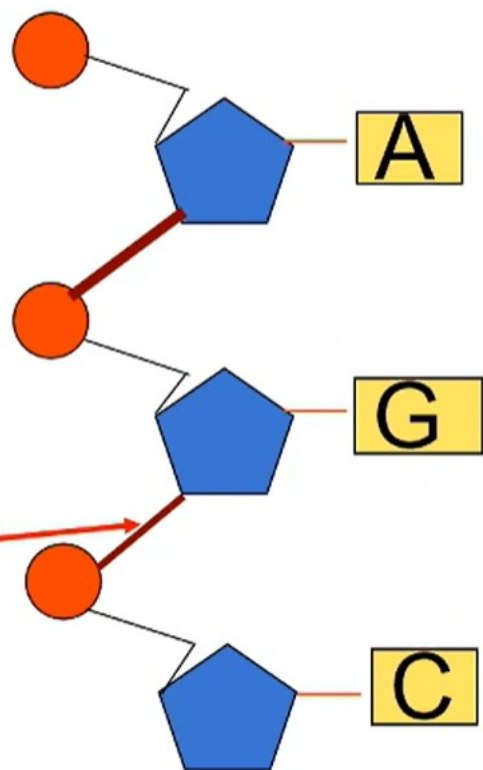
□□□□□

□ 4 □□

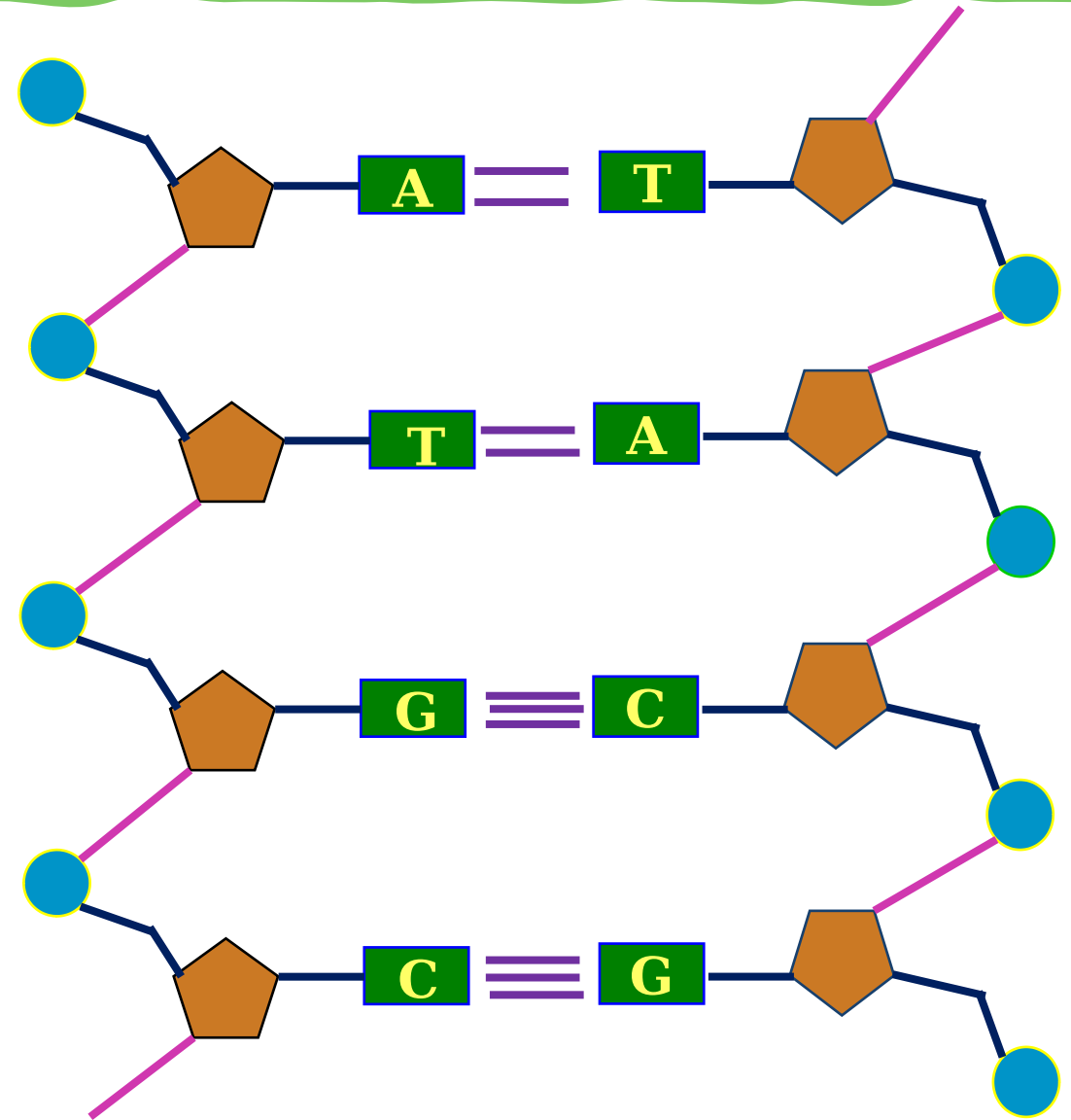
- (A)
- (G)
- (C)
- (U)



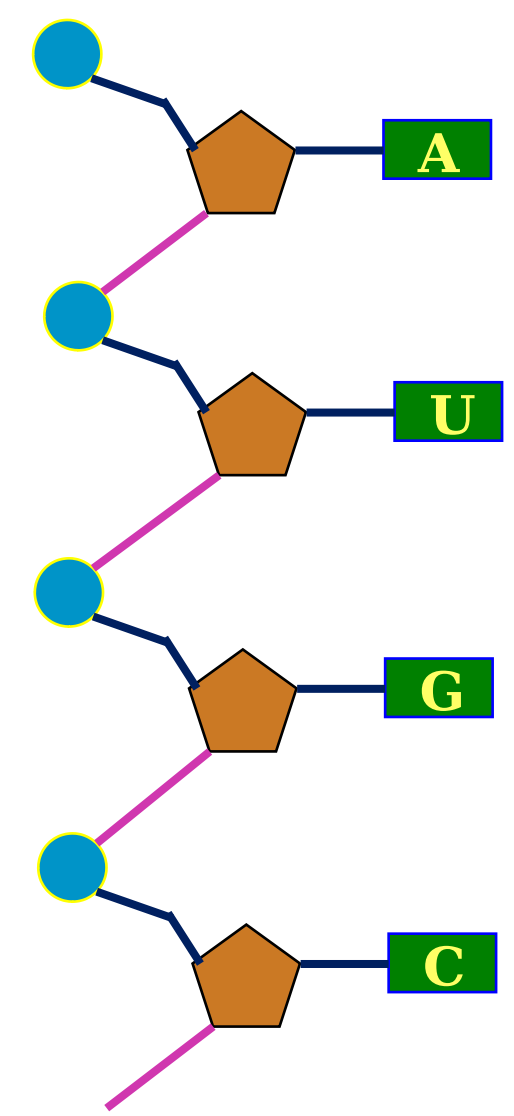
磷酸二酯键



□□ **DNA** □ **RNA** □□□□□□



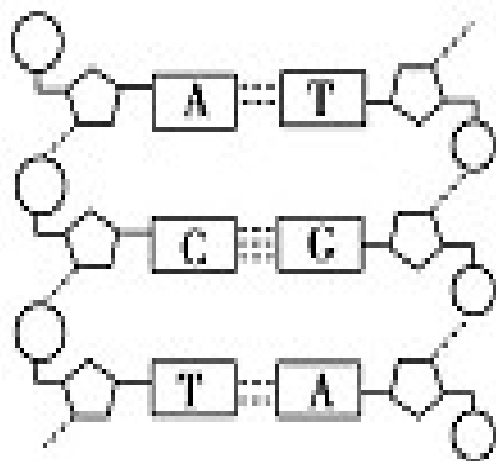
DNA □□□□



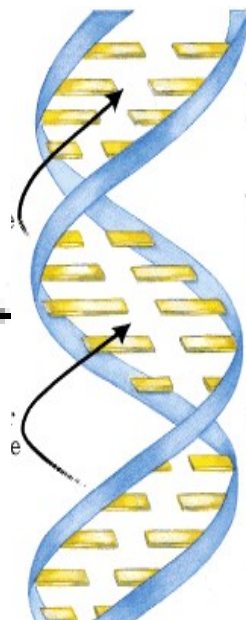
RNA □□□□□□□□

□□ DNA □ RNA □□□□□□

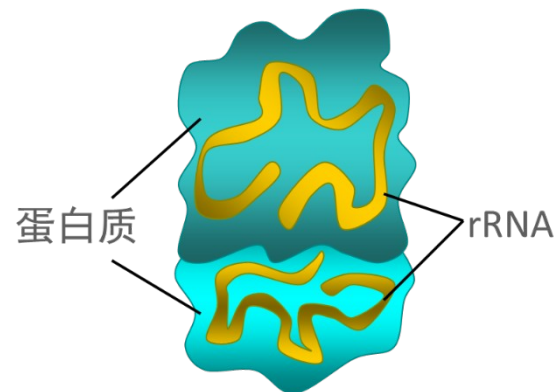
□□□□□



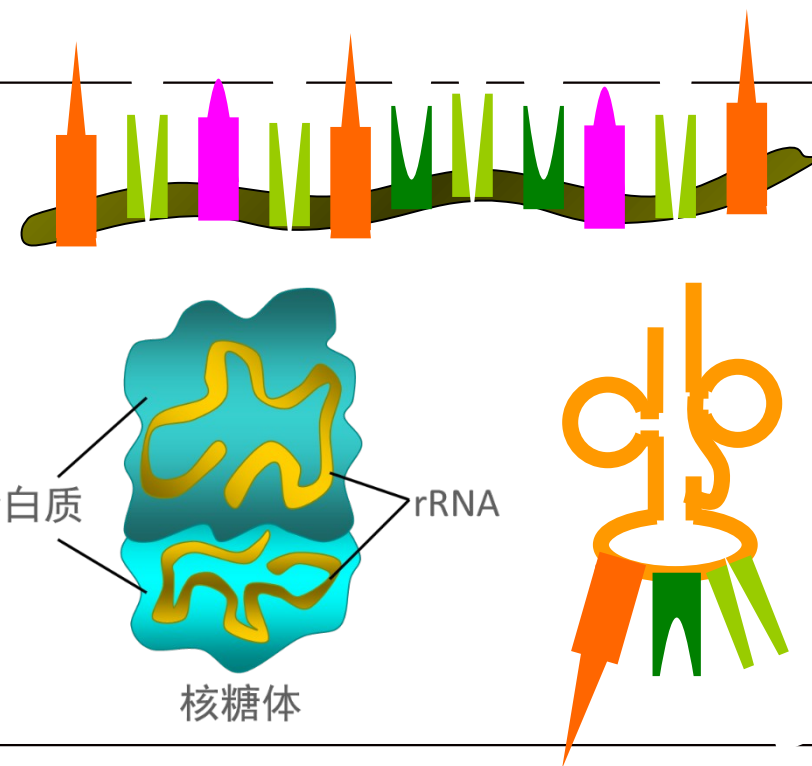
螺旋化

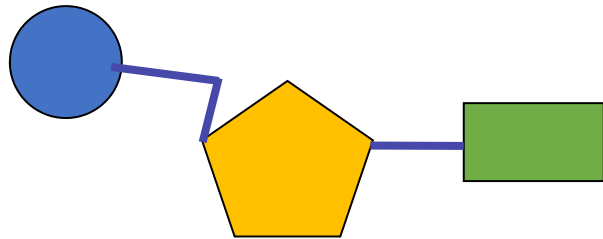
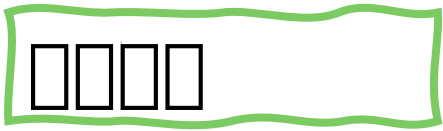


蛋白质



核糖体





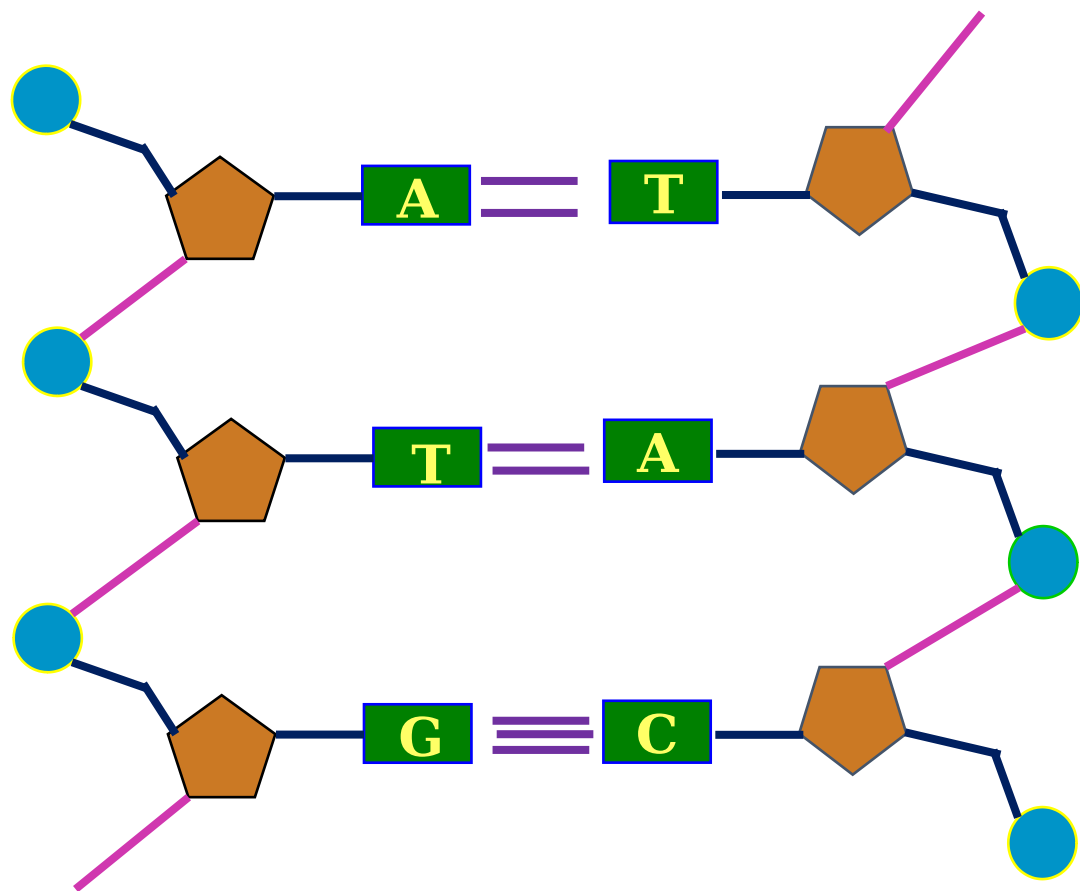
□□□□		□□□□	□□	□□□	□□□□	□□
□□□□		2 □ □ DNA □ RNA)	5 □	8 □	DNA	□□□□□□□□
□□	DNA □□	1 □ (DNA)	4 □	4 □	DNA	□□□□
	RNA □□	1 □ (RNA)	4 □	4 □	RNA	□□□ □□ HIV □



- 



6. DNA □□□□□□□□□□□□□□□□□□ □



— □□□□ — □□ — □□□□ —



7. DNA 由 4 种脱氧核糖核苷酸组成



氧化分解

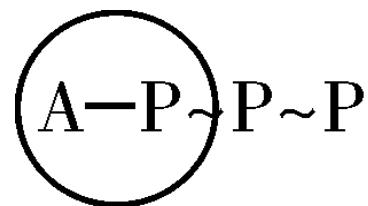
产生 CO_2 和 H_2O / 能量



拿捏了

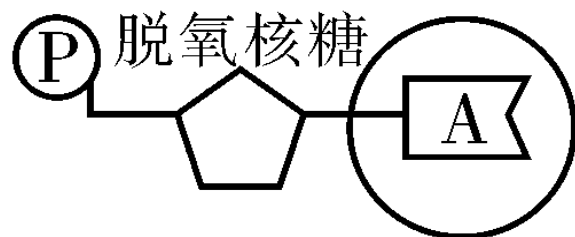


□□□□□□□□□□□□□□ “○”□□□□□□□□□□



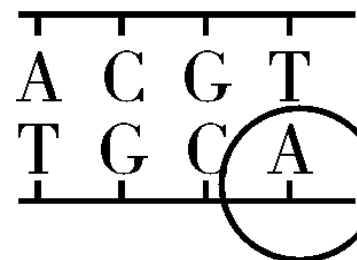
□□□□□□□□

①



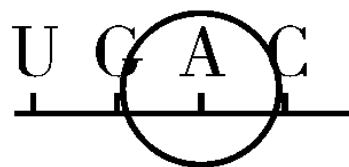
②

□□□



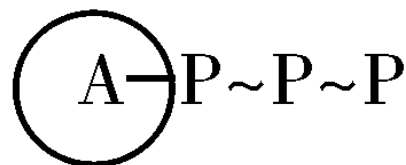
③

□□□□□□□□



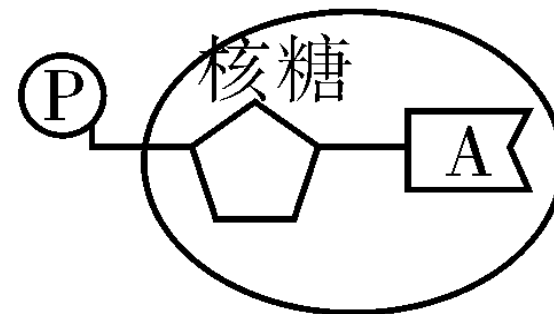
④

□□□□□□□□



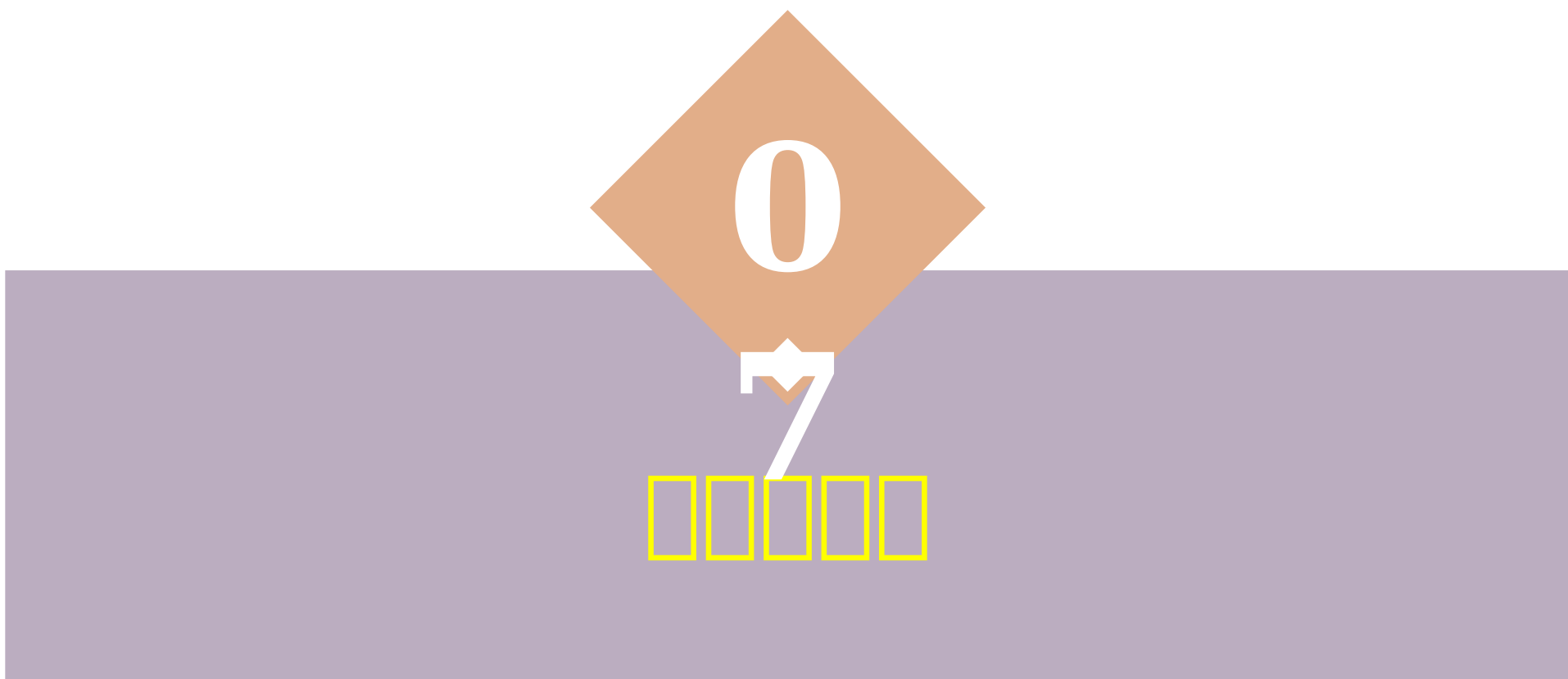
⑤

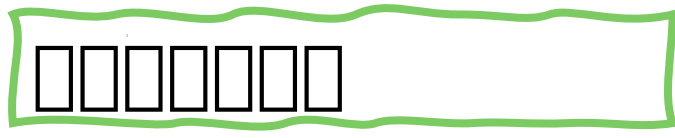
□□□□□□ + □□□



⑥

□□□□□□ + □□□

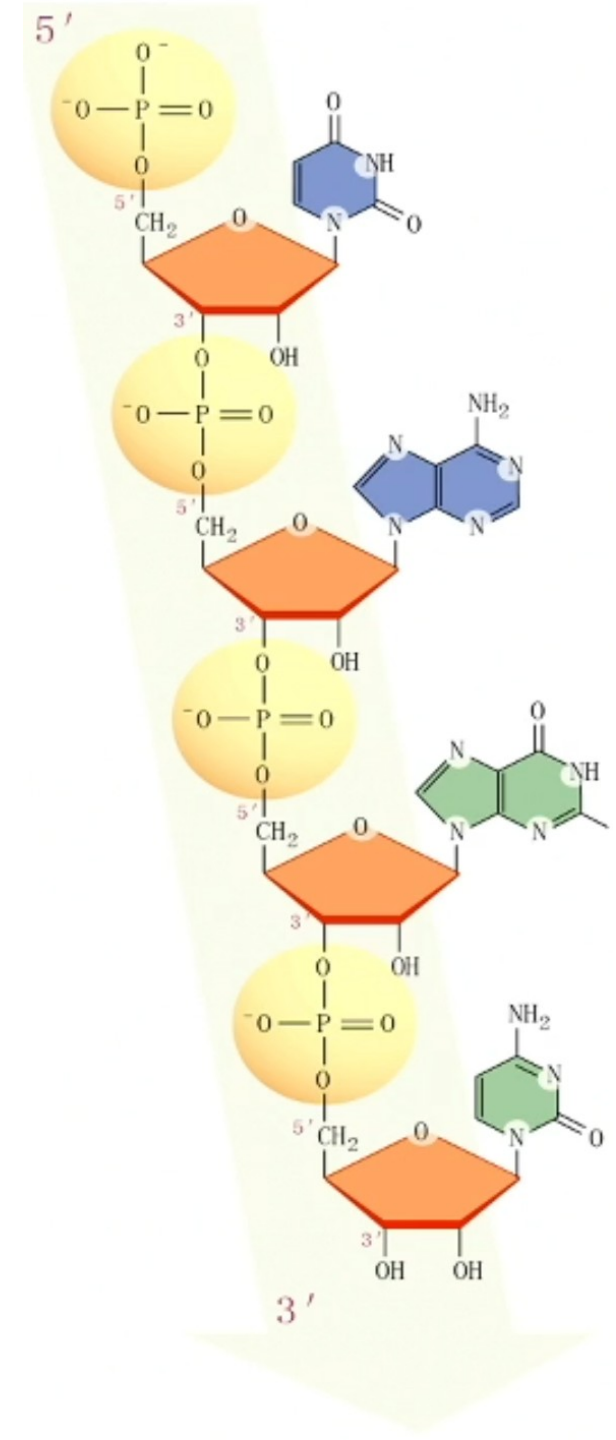


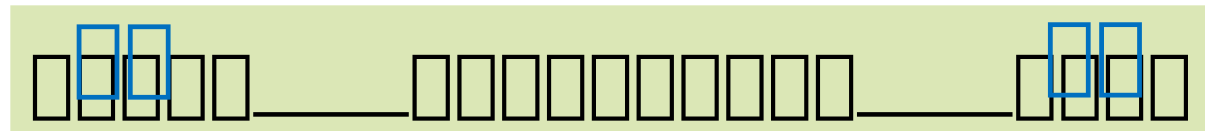
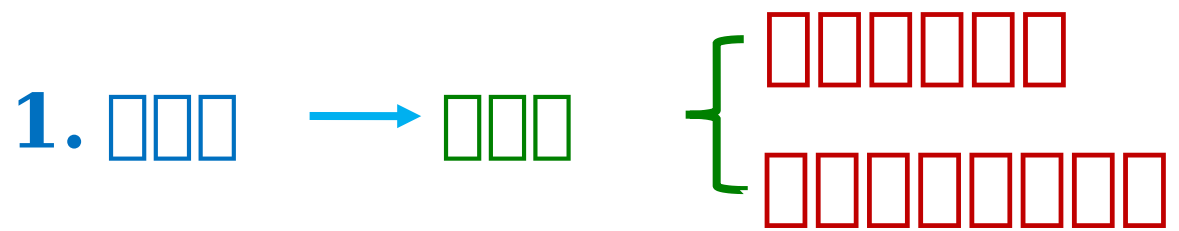
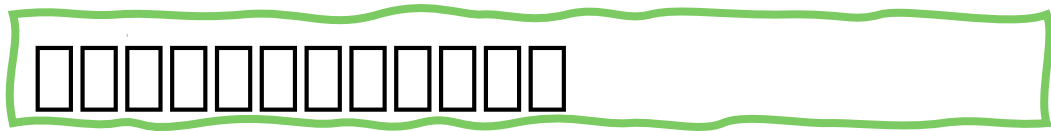


1.DNA □□□□□□□□□□□□□□

2.RNA

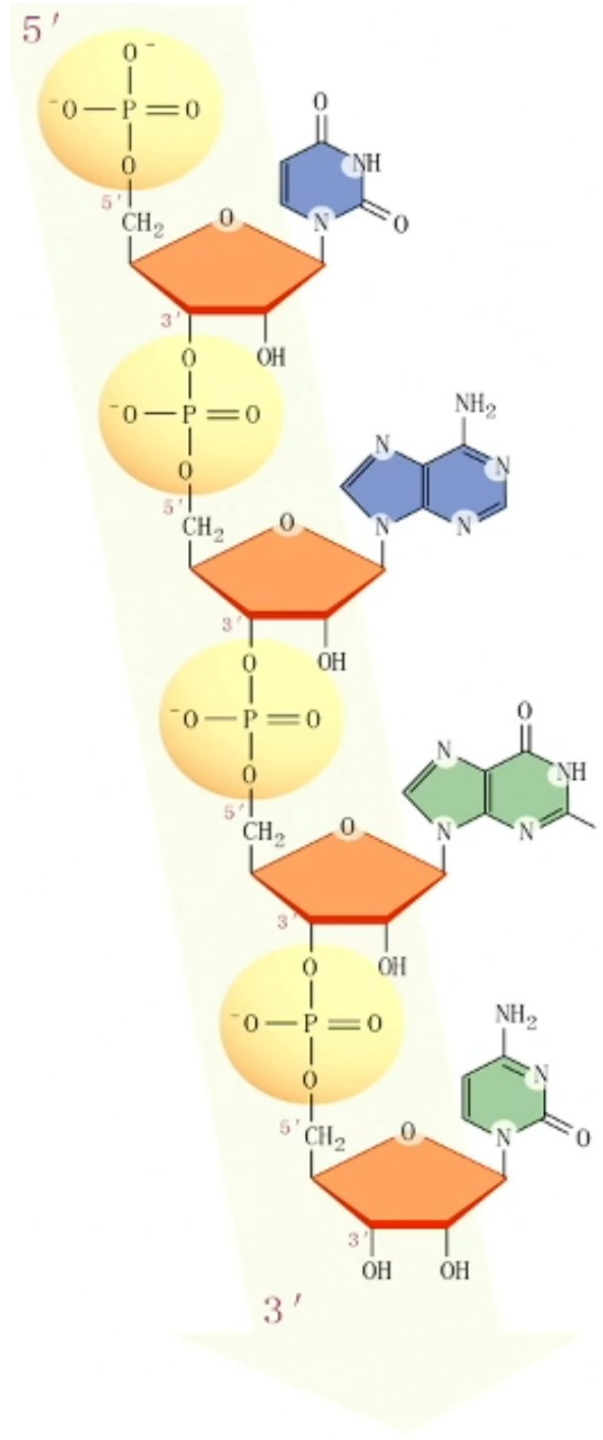
- ① □□ — □□□□ □□□□□□
- ② □□ **RNA** □□ — □□ □□□□□□
- ③ □□□□□□□□ **mRNA** □□□□□□□□□□ **tRNA** □□
□□□□□□□□□□ **rRNA** □





2. DNA

 **DNA**   



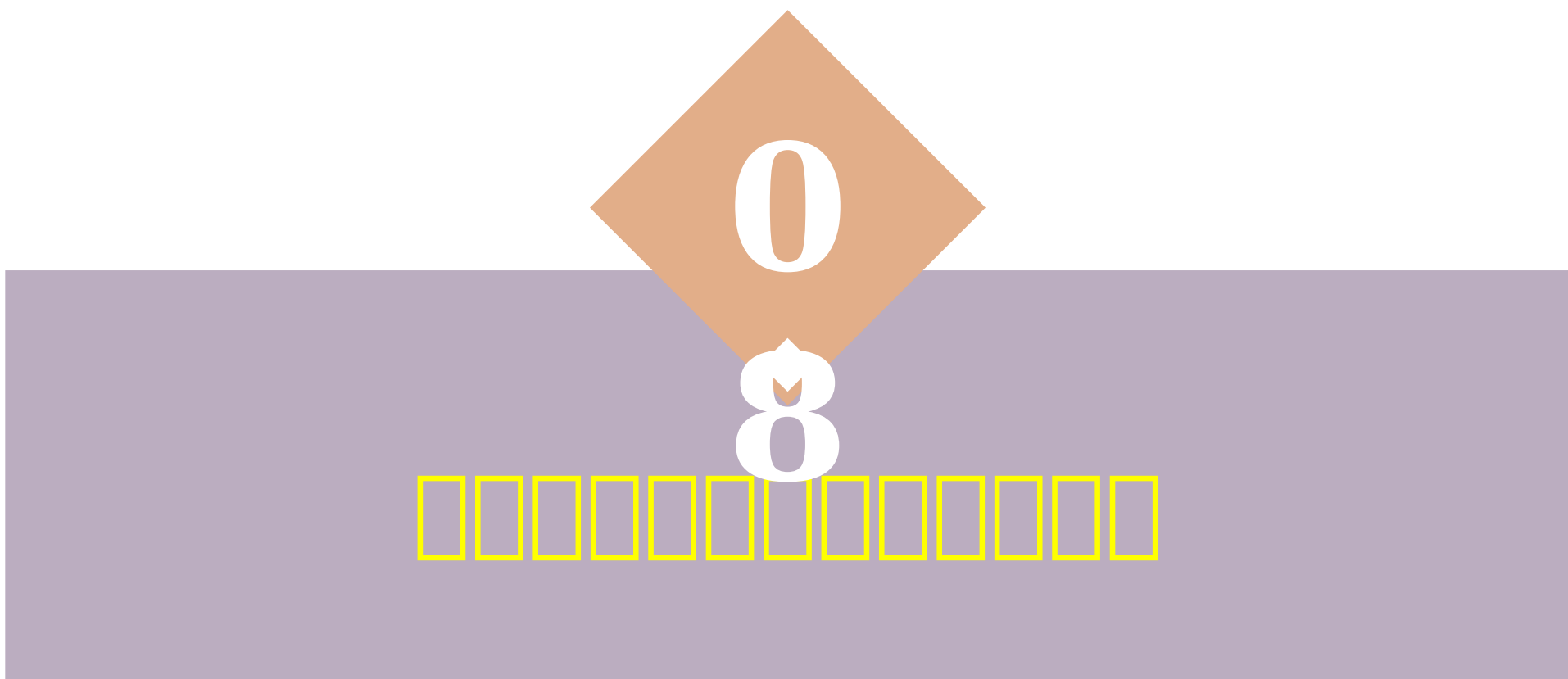


判断：

①具有100个核苷酸的DNA分子碱基排列顺序有 4^{100} 种？ **4⁵⁰**

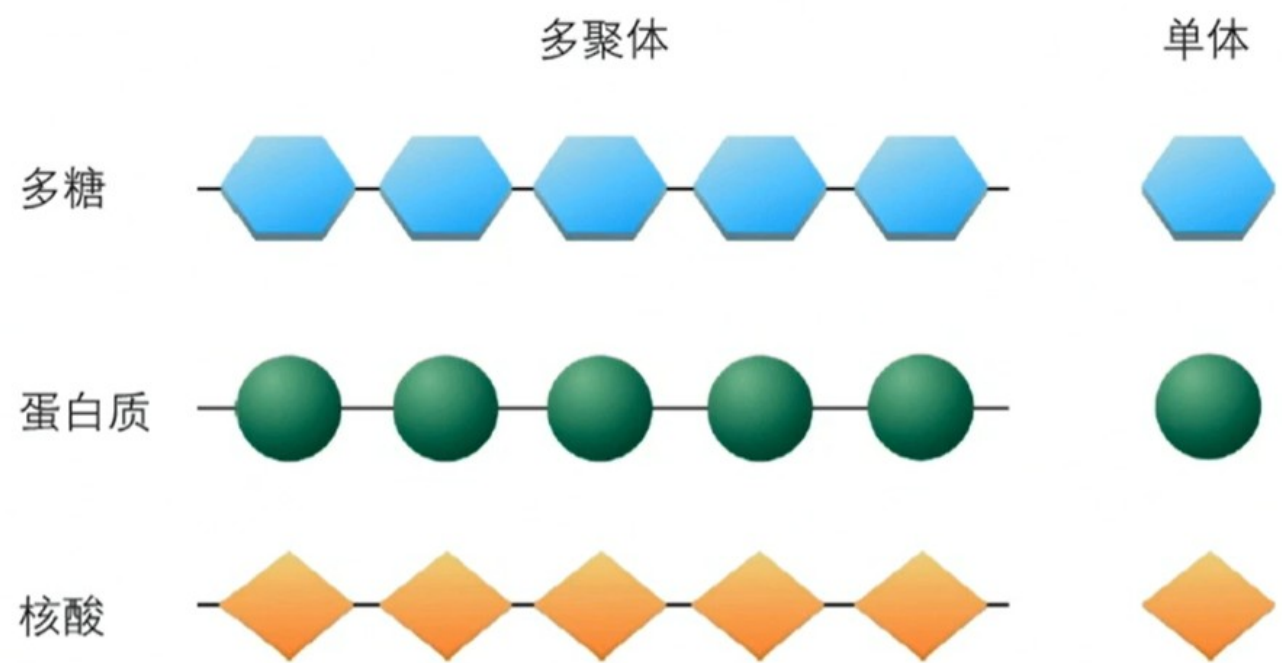
②人胰岛素基因共含有8416个碱基对，理论上胰岛素基因的碱基排列顺序有 4^{8416} 种







□□□□□□□□□□

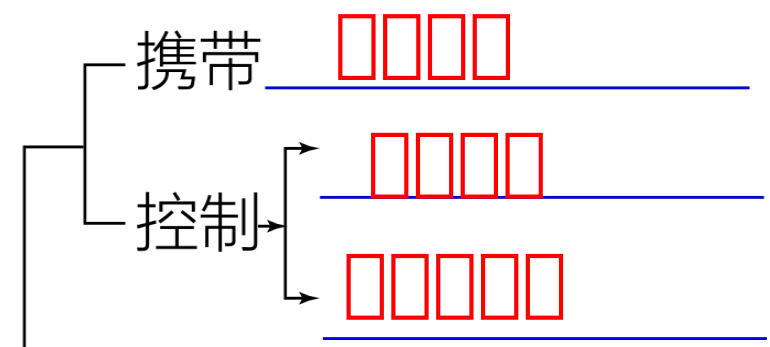


在构成细胞的化合物中，□□□□□□□□□□都是由□□□□连接成的□□□，都是生物大分子。

每一个单体都以□□□□□□□□□□□□□□□□为基本骨架，因此，**生物大分子也是以碳链为基本骨架的。**



□□□□



功能

细胞中的核酸

结构层次

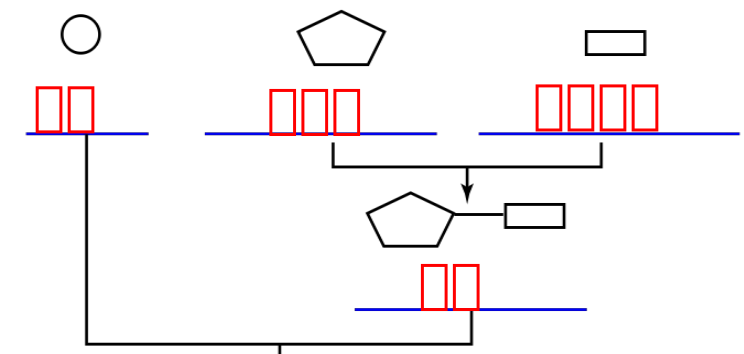
分布

DNA主要分布在: □□□

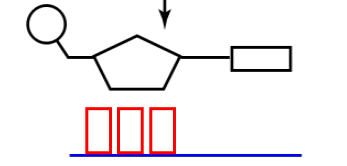
RNA主要分布在: □□□

元素 C □ H □ O □ N □ P

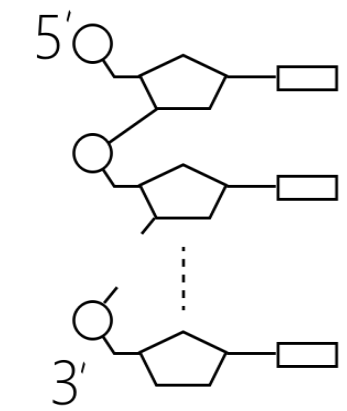
小分子物质



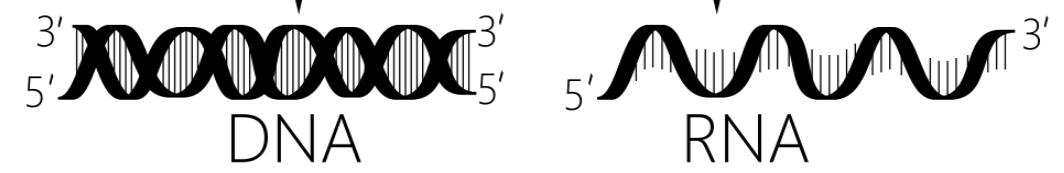
基本单位



核苷酸长链



核酸



DNA

RNA